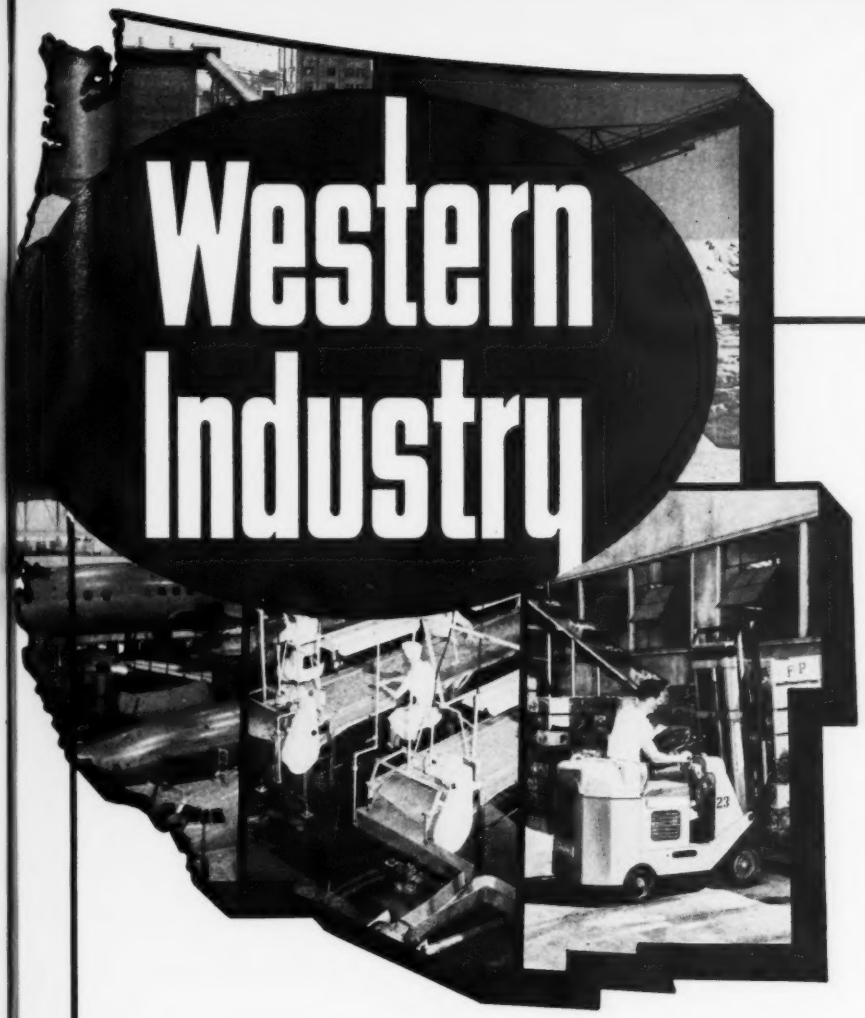
Western Industry



August 1955

7th annual MATERIALS HANDLING & PACKAGING issue

Designed to show how materials handling saves money—
at Ford's assembly plant . . . in packaging operations . . .
by coordinated production . . . in a large warehouse . . .
for two-story plants . . . using enclosed conveyors . . .
if the right pallets are used properly . . . many other ways

Table of contents.....page 4

COMPLETE FIRST EDITION of a new and useful tool for Western plant operating, maintenance, and purchasing executives - -

WESTERN Materials Handling & Packaging BUYERS' DIRECTORY

. . . on blue and yellow pages

NEW LOWEST TON HOUR COST

SAVES YOU DOLLARS ON MATERIALS HANDLING

HiDUTY *Lift Trucks*



HiDuty LIFT TRUCKS will move materials in your plant at a cost LOWER THAN ANY OTHER MAKE or MODEL. Any way you figure, it costs money to move materials . . . but it costs less if you are using HiDuty LIFT TRUCKS in your plant.

HiDuty's DELIVERED cost is lower...its operating and mechanical maintenance cost has proved lowest! Before you buy any fork lift truck, investigate HiDuty LIFT TRUCKS . . . manufactured in the WEST to meet the demands of WESTERN users.

New

WAUKESHA L-P GAS ENGINE provides up to 40% greater operating economy through reduced maintenance!
- **Longer engine life.**
- **Lower fuel cost.**

7 MODELS

HiDUTY 100W
Capacity: 1000 lbs. at 15" to center of load

HiDUTY 200W
Capacity. 2000 lbs. at 15" to center of load

HiDUTY 250W
Capacity: 2000 lbs. at 24" to center of load

HiDUTY 300W
Capacity: 3000 lbs. at 15" to center of load

HiDUTY 400
Capacity: 4000 lbs. at 24" to center of load

HiDUTY 500
Capacity: 5000 lbs. at 24" to center of load

HiDUTY 600
Capacity: 6000 lbs. at 24" to center of load
Available soon.

LOOK WHAT YOU SAVE!

HiDUTY MODEL 250 W

Delivered anywhere on West Coast for . . .

$672.50 LESS than comparable make X

$843.50 LESS than comparable make Y

$350.50 LESS than comparable make Z on Cushion Tires

Same low price

HiDUTY LIFT TRUCKS have not raised in price, and with freight advantages, Western firms can enjoy huge added savings in the purchase of lift trucks. SAVE THE COST OF TWO COMPLETE OVERHAULS!

FAMOUS FEATURES THAT MAKE HiDUTY LIFT TRUCKS FAMOUS

HYDROFLEX CLUTCH...a clutch designed for LIFT TRUCKS. Hydraulically actuated, mechanically simple...long life. GUARANTEED for one year!

FREE LIFT. Extra inches of stacking height without raising mast. (Optional.)

WAUKESHA INDUSTRIAL ENGINE ...famous for power and dependability. (Willys Jeep Engine in 4000 and 5000 lb. trucks.)

PNEUMATIC or CUSHION TIRES available at same low price.

COMPLETE LINE of ACCESSORIES.

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1414 Sixteenth Street

El Paso, Texas
Equipment Supply Co., Inc.
P. O. Box 1281
Phone 3-3691

Eugene, Oregon
Coast Cable Company
P. O. Box 602
Phone 5-0555

Los Angeles, Calif.
W. T. Billard, Inc.
734 East Third Street
Michigan 2659

Medford, Oregon
Material Handling Equipment Sales
915 Whitman Avenue
Phone 2-8946

Oakland, Calif.
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801 Jefferson St.

Portland, Oregon
Hallidie Machinery Co.
1545 S. E. Union
Fillmore 7491

Salt Lake City, Utah
Heiner Equipment & Supply Co.
501 West 7th South
Phone 3-3979

Seattle, Washington
Hallidie Machinery Co.
210 Hudson St., LAnder 9520

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Hallidie Machinery Co.
2605 No. Division, EM 7131

Yakima, Washington
Hallidie Machinery Co.
P. O. Box 415, Sunnyside, Wash.

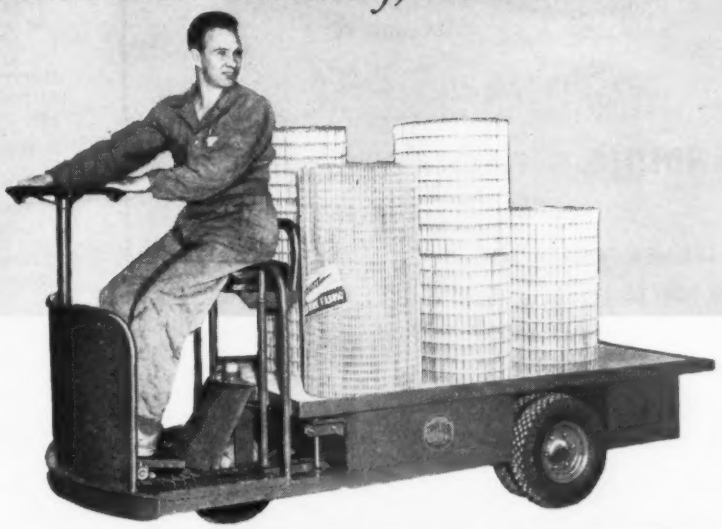
HiDUTY LIFT TRUCKS are manufactured by
TRANSITIER TRUCK COMPANY 5475 N. Lagoon Avenue, Swan Island, Portland 11, Oregon

For more details circle No. 1 on Reader Service Postcard
See Directory listing page 122, Yellow Section

Put New Efficiency in your . . .

materials handling

. . . and New Economy, too . . .



TAYLORTRUCK
MODEL B-5-72

with **TAYLORTRUCK**

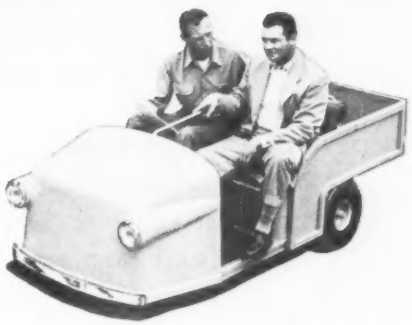
TAYLORTRUCK MAKES THIS PROMISE!

For *efficient, economical, dependable* materials handling about your plant, you *can't beat* TAYLORTRUCK! It gives you *low initial cost* and *low maintenance cost,* plus years of trouble-free service. Our customers declare TAYLORTRUCK *out-performs, out-lasts* other trucks in its class!

Electric powered for *smooth, silent, fumeless* operation! Gives quick acceleration; starts *instantly* in any weather. Ends forever "cold" starts or "boiling over!" A major airline uses *four* Model B TAYLORTRUCKS to replace *five* gas-driven rigs. Reports operation and maintenance cost *greatly reduced!*

Costs only a few cents a day to recharge batteries; batteries guaranteed 12 months. Single-unit, *all-welded frame* is built to take abuse.

TAYLORTRUCK can speed up materials handling for you. Get the complete story today; write for our free catalog.



TAYLORCAR

Personnel Carrier

It costs money when your executives walk. Get more man hours from your top executives, foremen and superintendents with the TAYLORCAR Model P-3-IN Personnel Carrier. Carries 4 persons; or 2 and 400 lbs. cargo. Sturdy all-welded frame; fibreglass body. Costs only a few cents a day to operate.

Desirable exclusive dealer territories are still available. Write today for full particulars.

TAYLOR MANUFACTURING CO.

10192-M Ball Road · **Anaheim, Calif.**

For more details circle No. 2 on Reader Service Postcard
See Directory listing page 121, Yellow Section

Western Industry

August 1955

Vol. XX, No. 8

7th annual

MATERIALS HANDLING & PACKAGING issue

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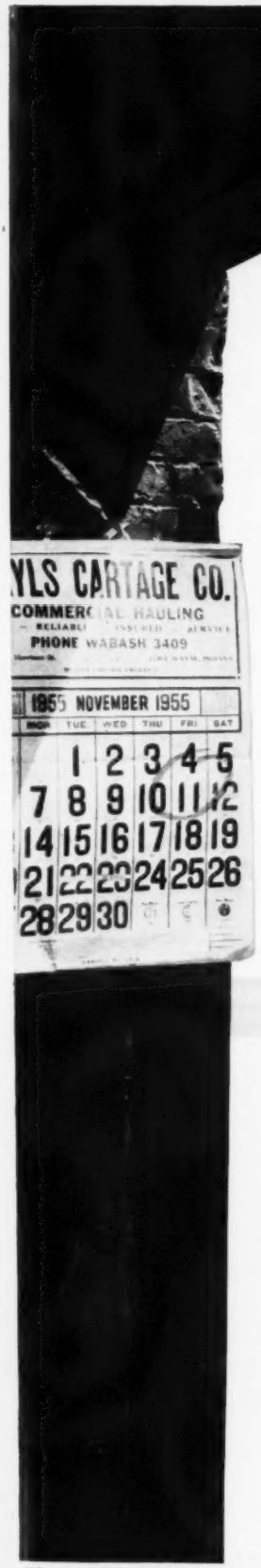
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50c per copy $4.00 per year

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SERVING ALL INDUSTRY IN THE NATION'S FASTEST GROWING REGION



RHEEM FIBRE DRUMS HELP BUSY SHIPPERS KEEP UP WITH THE CALENDAR

Time is money! That's why Rheem's distribution system, which covers more major markets faster, is so important to you.

To meet tight shipping schedules, you must have the shipping containers you need *when you need them.*

Rheem Fibre Drums help you keep up with the calendar by being readily available to major shipping points on the East Coast, in the Midwest, and on the West Coast. In many cases, they can be shipped by *truck* and *delivered right at the point of use.* This not only saves time, but also cuts handling costs.

Rheem Fibre Drums are inexpensive, lightweight, "tailor-made" containers, offering an amazingly tight seal and sturdy protection for your product.

For complete information of how Rheem Fibre Drums can save you time and money, write today to the Rheem office nearest you.



Did you know these facts about Rheem Fibre Drums?

1. They can be colorfully decorated, at low cost, through the silk screen process, or labels may be used.
2. Special interior linings can be applied to give the proper protection to a wide variety of products requiring it.
3. Special laminates can be built into the drum walls to provide an added moisture barrier without adding greatly to the cost.
4. The light weight of sturdy, durable, economical Rheem Fibre Drums reduces shipping costs. Empty drums can be nested to save space.

Switch in time, Switch to

Rheem Fibre Drums



About ⅓ the weight of steel—

and less than ½ the cost!

Rheem Manufacturing Company • 801 Chesley Ave., Richmond, Calif. • 4361 Firestone Blvd., South Gate, Calif.

For more details circle No. 3 on Reader Service Postcard

See Directory listing page 119, Yellow Section



When you need a major installation or individual materials handling or power transmission products . . .

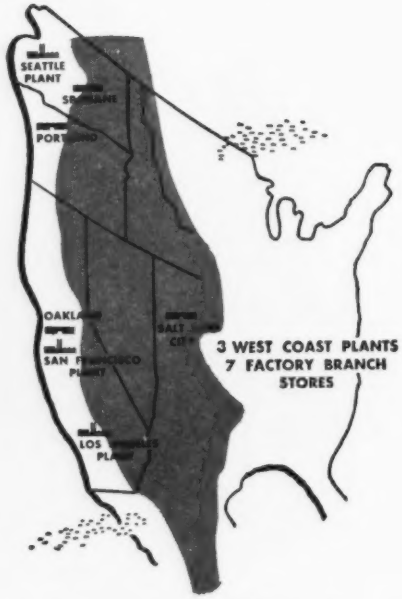
experienced engineering

Link-Belt is a world-recognized engineering firm. Our Western plants and offices have large engineering staffs with intimate knowledge of local conditions. They are prepared to carry through complete installations from planning to manufacture and, if desired, erection.



convenient warehousing

In the seven major Western industrial areas, Link-Belt maintains over-the-counter service on a complete range of power transmission, conveying and elevating products. There are factory branch stores to serve you at Spokane, Seattle, San Francisco, Salt Lake City, Portland, Oakland and Los Angeles. In addition, 30 authorized stock-carrying distributors in the West stock Link-Belt products.



modern fabricating facilities

Link-Belt operates three modern plants in the West—at San Francisco, Los Angeles and Seattle. Not only do these facilities help speed deliveries—they also save money on freight costs compared to Eastern shipments.



(1) WAREHOUSE in Seattle handles 5000 tons a month in orderly fashion on 840-ft. Trukveyor.



(2) CHEMICALS are distributed on this Link-Belt belt conveyor system in Tacoma plant.



(3) PULP MILL showing transfer tower and five Link-Belt belt conveyors for handling chips.

One source . . . one responsibility

for materials handling power transmission processing machinery

put the complete

....West Coast facilities

of Link-Belt

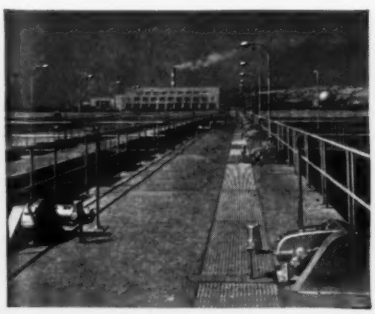
to work for you

LINK-BELT'S localized facilities can save you money. Take a look at a few of Link-Belt's broad range of materials handling and power transmission products shown here. Analyze how the Link-Belt facilities listed can serve you. Then call the Link-Belt office near you for an expert analysis of your requirements.

LINK-BELT

LINK-BELT COMPANY: Plants, Sales Offices and Factory Branch Stores at San Francisco 24, Los Angeles 33, Seattle 4. Sales Offices and Factory Branch Stores at Portland 10, Spokane 10, Oakland 7, Salt Lake City 1. Stock Carrying Distributors in Principal Areas.

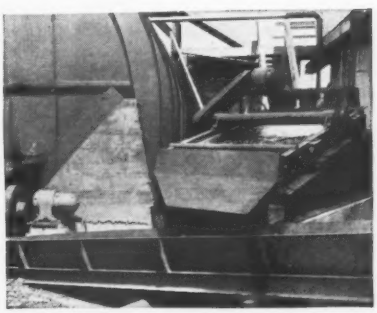
13,982



(4) SEWAGE is converted to fertilizer, fuel and clean water in Los Angeles with the help of 100 Straightline Collectors.



(5) STEEL PIPE cools on Link-Belt H-78 pintle chain conveyor with H-2 pusher attachments.



(6) SAWMILLS make wide use of Link-Belt products. Here flight conveyors and a vibrating screen handle bark and fines.

chains-sprockets enclosed drives bearings vibrating screens conveyor components

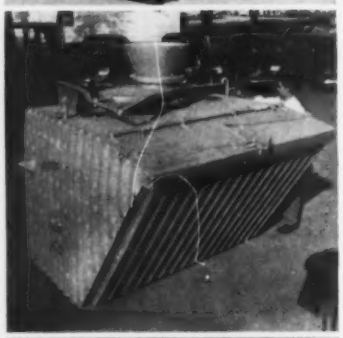
For more details circle No. 4 on Reader Service Postcard

See Directory listing page 115, Yellow Section

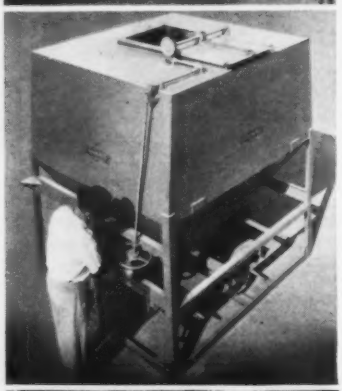
Briefly, this ad illustrates why DEMPSTER-DUMPSTER SYSTEM



Container at right has cast iron bottom and inside walls are lined with fire brick. It handles hot skim off aluminum.



This Tilt Type Container was the result of a cost-cutting idea whereby a high temperature dusty product would be handled by a plant's Dempster-Dumpster. Container has cooling fins, counter-balanced hinged lid with 3-way locking device, 16" sliding gate valve and two sight-glass inspection openings.



Here is a Hopper Type Container with a top door for filling and two bottom discharge doors operated by rack and pinion. Another case where the Dempster-Dumpster System was applied to an additional problem to further reduce costs.



Container at right is just one of several different types we have designed to handle equipment, materials, packages, parcels, etc.

IN A NORMAL INSTALLATION the Dempster-Dumpster System is purchased by a plant because of its proved record for handling bulk materials at tremendous savings. This normal installation usually includes one truck mounted Dempster-Dumpster and any number of standard containers designed to meet the various requirements within the plant. In some cases, containers number 40 to 50. These containers can range in capacity up to 21 cu. yds., with all containers served by the one Dempster-Dumpster.

In the great majority of cases this basic installation is just a starter. Management men, constantly looking for lower operating costs, find numerous and amazing extra savings in the Dempster-Dumpster System. Once in service, transporting developments of every description come to light that supplement the original functions of the equipment. Your own men find easier, quicker and additional cost saving ideas for its use. Many even overshadow the original savings and the equipment becomes more and more indispensable.

Look over just a few of the "Special" containers illustrated in this ad. They are all the result of rough ideas that originated with the men in plants after a basic installation, then developed by our engineers. All ideas were stimulated by the powerful Dempster-Dumpster and its flexibility in picking up, hauling, setting down or dumping anything that needs transporting, at lower cost.

One man, the driver, and a few simple hydraulic controls in the cab of a Dempster-Dumpster, will become indispensable in your plant. It is just that in hundreds of plants of every description throughout the nation. Let one of our representatives give you details of installations. Manufactured exclusively by Dempster Brothers, Inc.



Above container is built with cast iron liner. The holes in outer wall are for cooling.



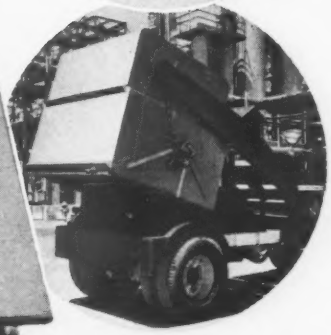
Here is one of several special drop bottom type containers equipped with couplers and ball bearing trucks for operation in train on rails.

THE DEMPSTER DUMPSTER SYSTEM

DEMPSTER BROTHERS

so many plants find the indispensable...





Two photos above show how all containers, regardless of design, are picked up and hauled. At destination materials are dumped from drop bottom containers as shown at left . . . from Tilt and Skip Type Containers by tilting. Any load, of course, may be set down intact.



This is a special adaptation whereby waste zinc slurry is pumped into two containers, which serve as settling tanks, enabling majority of the water to be decanted before sludge is transported and dumped at waste basin.



Tank Type Containers are available with or without casters in steel, aluminum, stainless steel, etc. Capacity ranges up to 1,200 gal. They may be lined with rubber, lead, highly resistance coatings, etc.



This is a master container with three 2 cu. yd. insert containers. Each insert container is provided with casters, counter-balanced spring-hinged lid for loading and dumping.

585 N. Knox, Knoxville 17, Tennessee

For more details circle No. 5 on Reader Service Postcard
See Directory listing page 108, Yellow Section



Pouring steel in 19th century—reprinted from Scientific American.

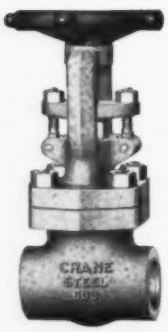
From "crazy notion" to No. 1 industry – steel

It's a fact—people laughed at William Kelly's idea for converting iron to steel. Imagine, they said, generating heat by blowing cold air into molten metal! But in 1847—9 years ahead of Bessemer—Kelly succeeded.

America's steel industry now leads the world because metallurgical science and mechanized production got together early. Piping and valves have played no small part. Today's steel mills measure their piping systems by the mile—count their valves by thousands.

For controlling steam, water, oil, gas, air and acids—all used in steel-making—the industry's thrifty buyers prefer Crane valves. A quality manufacturer for 100 years, Crane has concentrated on making better valves for all industry's piping needs.

To select "Crane" is to assure dependable flow control and low-cost piping upkeep. That's why more Crane valves are used than any other make. Crane Co., General Offices, Chicago 5, Ill. Branches and Wholesalers everywhere.



Crane makes valves and fittings for every piping need—in brass, iron, steel, and alloys. Leader in completeness of line as well as quality, Crane is . . .

Industry's first choice for better piping materials

CRANE CO.

VALVES • FITTINGS • PIPE
KITCHENS • PLUMBING • HEATING

CRANE'S FIRST CENTURY...1855-1955

For more details circle No. 6 on Reader Service Postcard

For more details, adv. on opposite page, circle No. 7 on Reader Service Postcard→

With the All-Motor Type,

ALL-STEEL FALK Motoreducer

you can interchange motors in minutes... *on the job!*



Fast, easy maintenance gives savings in time and money

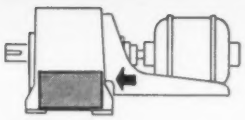
With the *all-steel*, All-Motor type FALK Motoreducer . . . the only complete and compact motorized reducer with a separately mounted, resilient Steelflex coupling-connected motor . . . you can replace or interchange motors, or even *parts*, in minutes—*on the job*, without long and costly "down time"! Ratios can be changed (within capacity) without motor modification.

Any make, speed, or type of standard foot-mounted motor within the unit's AGMA rating is usable *without modification* on this All-Motor type Motoreducer. Motors with variable speed drive arrangement can be used, if desired. No "partial" motor or special shaft is required in event of motor replacement—simply use a complete motor, available for quick delivery from factory or local stocks without expensive delays.

Add to these exclusive maintenance-saving advantages the FALK "In-built" Factors, described at the right, and you have an unbeatable combination of quality, application adaptability, dependability, long-range economy, and dollar-for-dollar value. Write for Bulletin 3104.

IMMEDIATE DELIVERY
...from West Coast Stock

Units and spare parts in Factory Stock at Oakland, California and Portland, Oregon. Authorized stocking Falk Distributors throughout the West.



Every FALK Motoreducer has these "In-built" Factors—

Positive Lubrication. Large sump capacity . . . oil-tight construction assures clean lubricant . . . direct dip of revolving elements provides positive lubrication at all speeds.

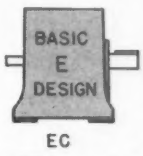
Wide Speed Range. Selective ratio combinations provide output speeds from 1.5 rpm to 1430 rpm with stock gears.

Streamlined inside and outside. Smooth, clean surfaces; machine welded construction conforms to NEMA motor frames.

Sealed Housings. Dual closures and one-way vents keep oil *in*, dust and moisture *out*. Units are splash-proof, leakproof, dustproof.

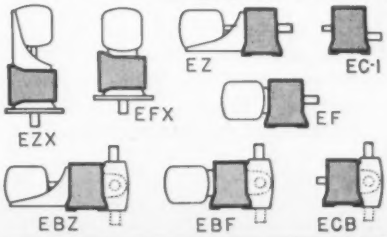
Precision Gearing. Heat treated alloy steel, precision cut and shaved helical gearing throughout . . . quiet-operating crown shaved pinions . . . taper bored gears for easy ratio changes.

All-steel Housings. Unbreakable, strong, rigid. Generous overhung load capacities provided by wide bearing spans, large shafts and bearings.



EC

The basic E design permits maximum use of standardized parts . . . closer control over materials, processing, inspection and assembly . . . resulting in faster delivery from interchangeable stocked assemblies.



FALK ...a good name in industry

THE FALK CORPORATION · 3001 W. Canal St. · Milwaukee 8, Wis.

WRITE FOR BULLETIN 3104

specify CF&I cal-wic® MESH CLOTH



and be sure of getting the right metal, mesh and weave

Do you use mesh cloth for screening, filtering, grading, cleaning, processing? Then it will pay you to specify CF&I Cal-Wic Mesh Cloth.

Cal-Wic, made by CF&I, can always be manu-tured to your exact mesh, metal and weave specifications. . . . is always "right" to fill your operational needs. And records prove that it can be relied upon to give exceptionally long service life.

A product of CF&I, Cal-Wic is under the careful control and supervision of CF&I. It is this careful manufacturing procedure that assures your getting mesh cloth that will give optimum performance on the job. Call our nearest District Sales Office for additional information . . . or to discuss your immediate needs.

3189

CAL-WIC
INDUSTRIAL SCREENS
THE COLORADO FUEL AND IRON CORPORATION
CF&I

Albuquerque • Amarillo • Billings • Boise • Butte • Casper
Denver • El Paso • Ft. Worth • Houston • Lincoln (Neb.) • Los Angeles • Oakland • Oklahoma City • Phoenix
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CANADIAN REPRESENTATIVES AT: Calgary • Edmonton • Montreal • Vancouver

For more details circle No. 8 on Reader Service Postcard
See Directory listing page 107, Yellow Section



Mechanized Freight Docks Keep Freight Moving

Mechanized freight docks at Consolidated Freightways terminals were designed with your shipments in mind. They keep your freight separate and keep it moving... result in faster transfer of cargoes from city pick-up trucks to over-the-road equipment, less handling, surer checking.

Consolidated Freightways has more mechanized freight docks like the above than any other carrier, an added CF service of direct benefit to you—and your customers.

One more reason to rely on Consolidated Freightways, America's finest *complete* motor freight service.

CONSOLIDATED FREIGHTWAYS



SEATTLE • PORTLAND • SAN FRANCISCO - OAKLAND • LOS ANGELES • SPOKANE • SALT LAKE CITY • MINNEAPOLIS - ST. PAUL • CHICAGO

Terminals in 49 other key cities from the Pacific Coast to the Great Lakes... Thru service to all major eastern cities

For more details circle No. 9 on Reader Service Postcard



...naturally it's

AMERICAN MONORAIL

This American MonoRail Monotractor unit, recently installed in a rug and carpet warehouse, dispatches hard to handle, big bulky loads over a wide area. Fully automatic, with finger-tip control, with a hoist capacity of 1,000 pounds, this installation is SAVING 200 MAN HOURS PER WEEK.

This is another of the many examples of American MonoRail engineering for low-cost, efficient overhead handling. Let your American MonoRail representative explain the versatility, low cost and low maintenance of American MonoRail equipment. Consultation in connection with any handling problem is available without obligation.

AMERICAN OVERHEAD HANDLING EQUIPMENT

MONORAIL COMPANY

13117 ATHENS AVENUE • CLEVELAND 7, OHIO

[IN CANADA—CANADIAN MONORAIL CO., LTD., GALT, ONT.]

Los Angeles, Calif.
American Monorail Co.
4645 Anaheim Telegraph Road

Seattle 7, Wash.
F. T. Crowe Co.
325 Second Ave.

San Francisco, Calif.
Robert M. Taylor Co.
268 Market St.

Portland 7, Oregon
McMahon Bros., Inc.
337 Pittock Block

For more details circle No. 10 on Reader Service Postcard
See Directory listing page 102, Yellow Section



"UNOBA... a truly versatile grease"

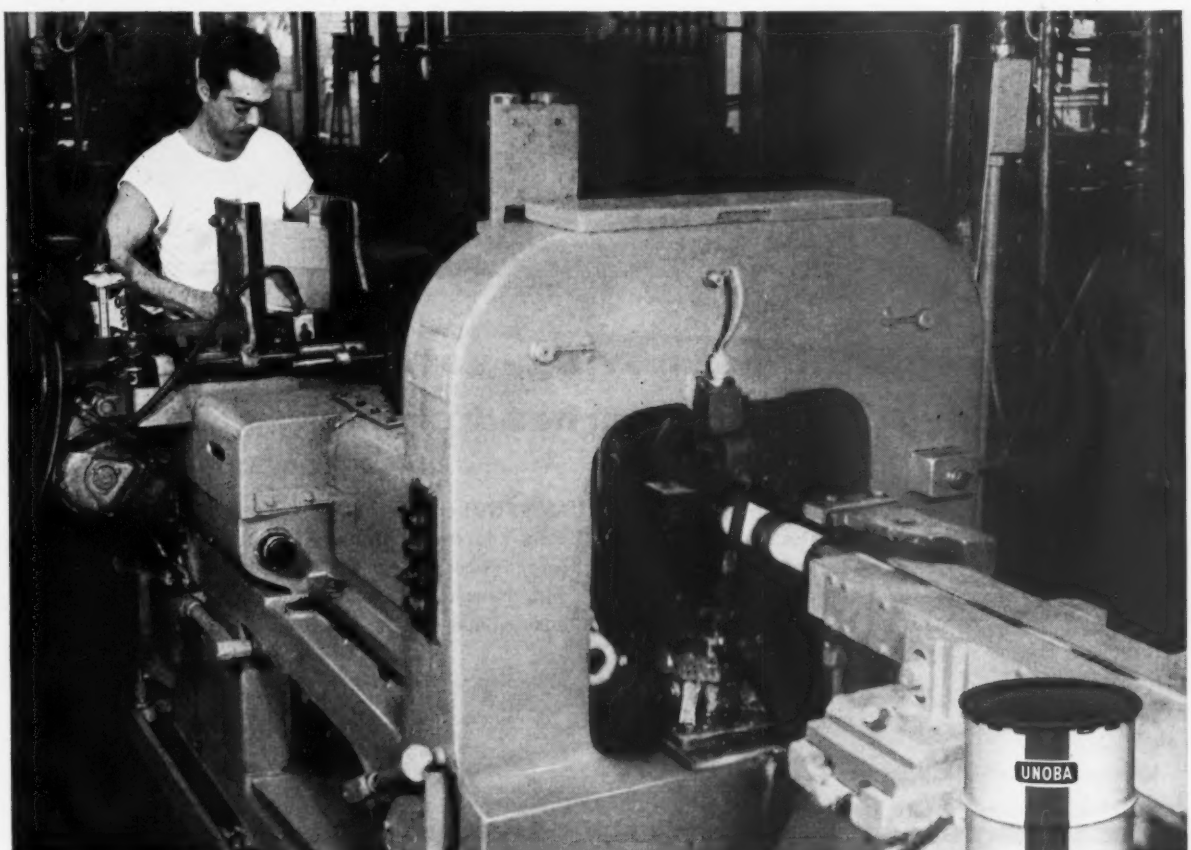
F. W. Seineke, plant manager, Pacific Can Co., Los Angeles, California

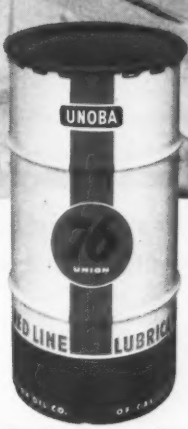
"Our experience has shown that Union's UNOBA F2 grease is useful in almost every type of can-making machine.

"UNOBA adheres to metal in spite of centrifugal forces present in such machines as high-speed double seamers. And although UNOBA F2's high melt-point prevents bleeding at the hot end of body-makers, it doesn't channel in bearings where temperatures are lower. We've found UNOBA to be a truly versatile grease in our operation."

If you're not already familiar with Union's barium-lithium base UNOBA grease, we suggest you contact your nearby Union Oil representative.

He will recommend applications of this remarkable *multi-purpose* grease which can't help but effect worthwhile economies in your operation.

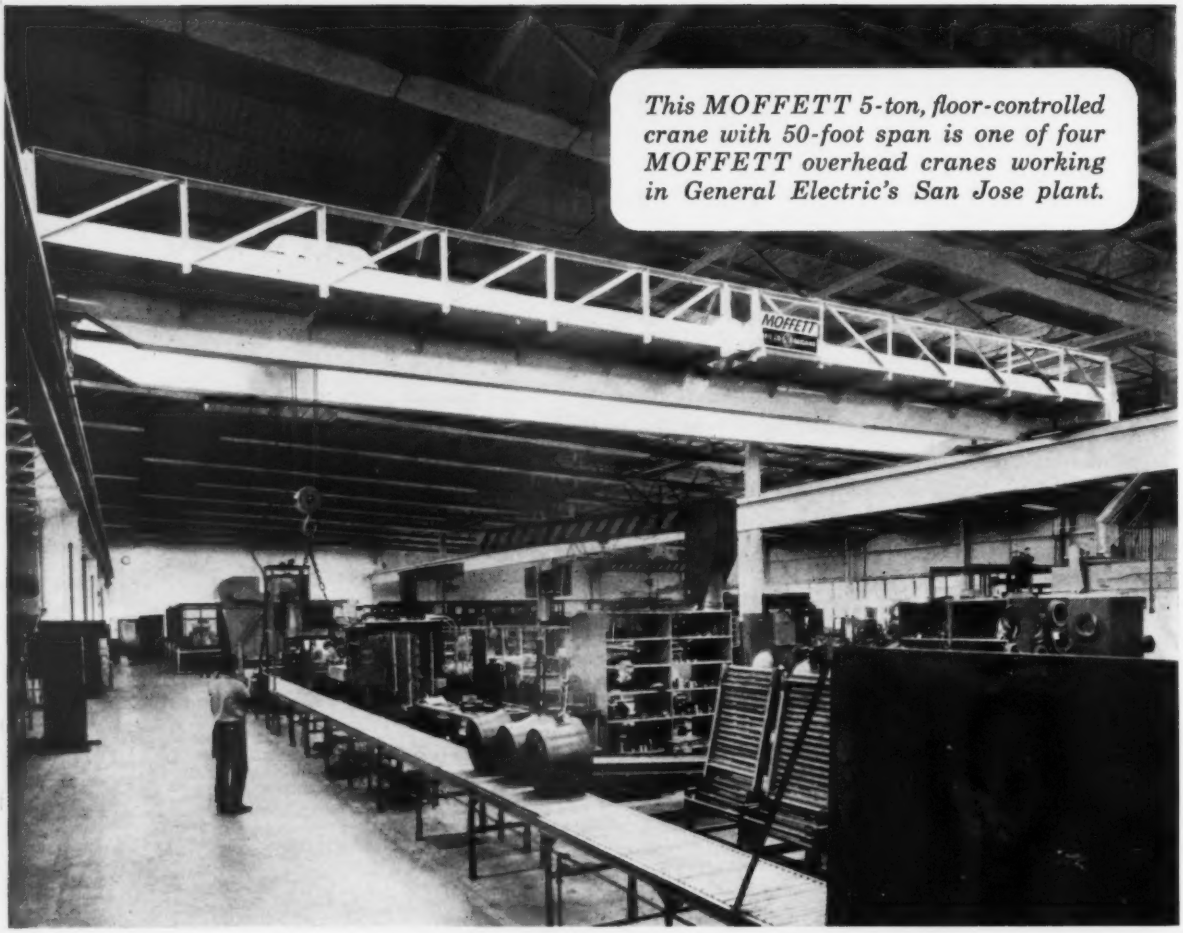




76 UNION OIL COMPANY
OF CALIFORNIA

Los Angeles: Union Oil Bldg. • **New York:** 45 Rockefeller Plaza • **Chicago:** 1612 Bankers Bldg. • **New Orleans:** 644 National Bank of Commerce Bldg. • **Atlanta:** 401 Atlanta National Bldg. • **Kansas City, Mo.:** 612 W. 47th St.

For more details circle No. 11 on Reader Service Postcard



This MOFFETT 5-ton, floor-controlled crane with 50-foot span is one of four MOFFETT overhead cranes working in General Electric's San Jose plant.

To keep things moving, get a MOFFETT "plant individualized" overhead crane 1/4 to 650 TONS

An overhead crane is a capital investment that's productive like a lathe or milling machine, yet structurally a part of your building. Because it keeps things moving, safely, overhead, out of aisles, you're able to get more production from less factory space. To make sure this key piece of equipment is right for your operation, get it "plant individualized" by MOFFETT.

Often you can make substantial savings in plant design, if you consult us in the planning stages – particularly if you have special materials handling problems.

MOFFETT engineers are old hands at designing special features into cranes to improve their productivity. In most cases, you get fast, personal service because you work directly with the engineers designing your crane, thus avoid red tape and foul-ups.

Why settle for less than a

"plant individualized" crane?

Call us NOW. No obligation.

10

MOFFETT CRANE TYPES • continuous duty • heavy industrial duty intermittent duty • powerhouse • standby • steel mill • gantry • special purpose

PAY AS YOU DEPRECIATE. Take advantage of new, faster depreciation schedules... replace older cranes and outmoded material handling methods with modern MOFFETT cranes. Call us for help on pay-as-you-depreciate financing.

MOFFETT ENGINEERING COMPANY

Traveling Cranes · Hoists

579 Cleveland Ave., Albany, Calif.
LAndscape 5-4916
15 Park Row, New York 38 • WOrth 2-7048

For more details circle No. 12 on Reader Service Postcard
See Directory listing page 116, Yellow Section

Now you can get new Hyster

"HYSTAMATIC" DRIVE

fluid torque converter for YC-40 and UC-30 Lift Trucks (4000 and 3000 lbs.)

The most positive "Hairline Inching Control" for stacking, carloading and close-quarter operation.

"Hystamatic" offers the *best control of lift truck power,* makes possible smoother, faster, more effective lift truck operation.

"Hystamatic" incorporates all these latest design advances in fluid converter-type drives:

Automatic Operation speeds forward-reverse shifting—takes full advantage of Hyster fastest lifting speed.

Smoother Operation with finger-tip ease. Sudden shock loads in transmission are cushioned by hydraulic oil in torque converter. Power surges are eliminated.

No Engine Lugging. Torque converter automatically adjusts transmission reduction to driving conditions.

Simplicity of Design makes "Hystamatic" easy to service



Overhead guard is optional equipment.

PLUS...

Hairline Inching Control. Slip for starting and inching is taken through torque converter. Operator can position load in tightest quarters with precision. *"Hystamatic" greatly improves performance in stacking loads where it is necessary to inch and raise the load at the same time.*

Precision Control of Power to Wheels improves traction where traction is critical. Just the *right* amount of power to drive wheels is obtained by control of engine speed with throttle.

Call your Hyster Dealer for full details, or write for Form 1330.

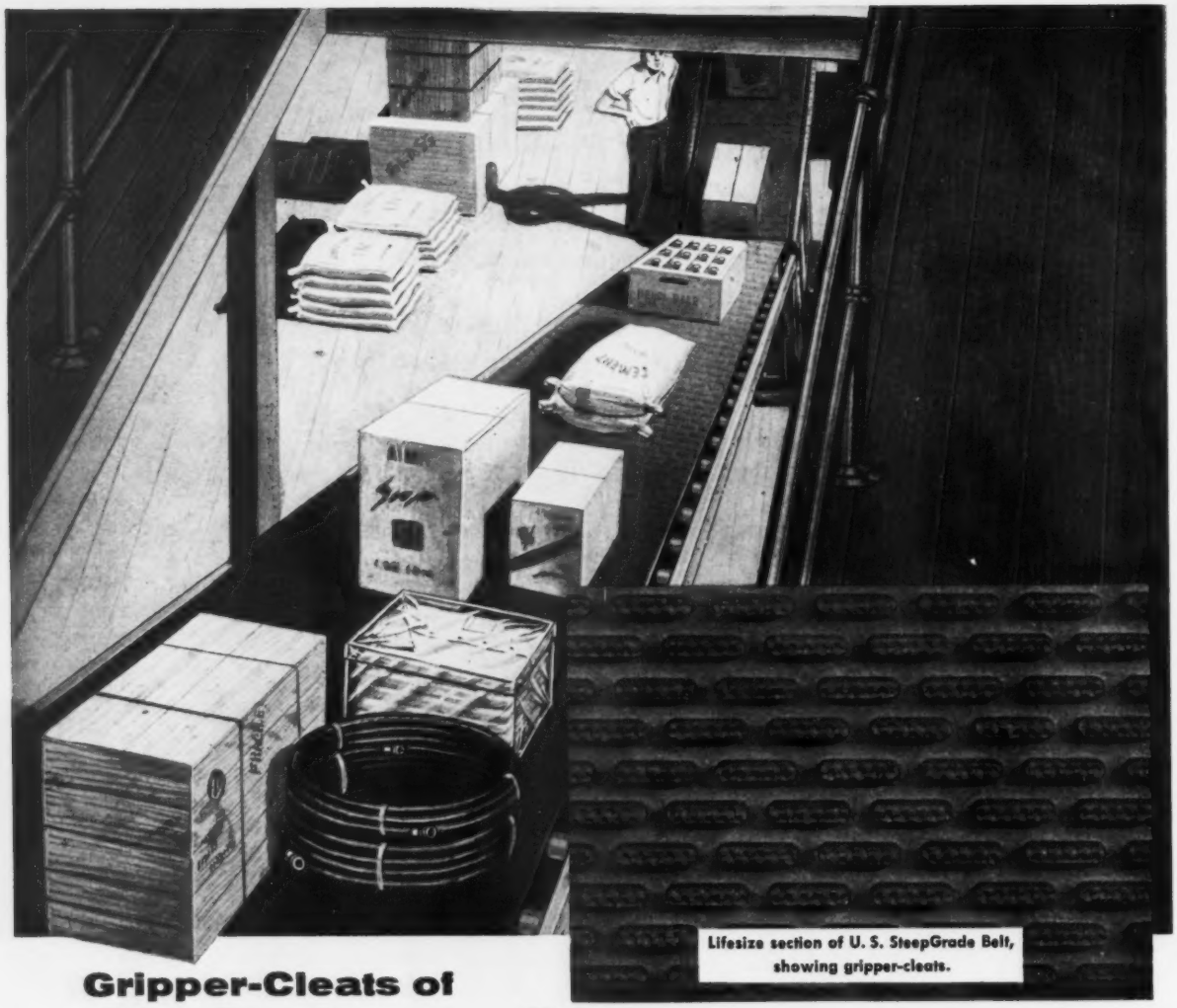
HYSTER COMPANY
753 9th Ave. North
Seattle 9, Wash.
ELliott 2401

HYSTER COMPANY
4445 3rd Street
San Francisco 24, Calif.
Mission 8-0680

HYSTER COMPANY
2425 So. Garfield Ave.
Los Angeles 22, Calif.
RAymond 3-6255

HYSTER SALES COMPANY
2105 S. E. 7th Ave.
Portland 8, Oregon
Filmore 6471

For more details circle No. 13 on Reader Service Postcard
See Directory listing page 113, Pellow Section



Lifesize section of U. S. SteepGrade Belt, showing gripper-cleats.

Gripper-Cleats of U. S. STEEPGRADE Provide Non-Slip Package Control on Steep Inclines and Declines

The new, *exclusive* gripper-cleats of the U.S. SteepGrade Belt give positive non-slip control of many materials on ascents or descents as steep as 45 degrees. This feature also saves floor area and belt footage, because the steeper the incline the less floor space occupied. The U. S. SteepGrade Belt is perfect for small buildings.

Note the gripper-cleats in the close-up photo of the belt section. These cleats are *not* attached or cut in; they are *molded*—a true and integral part of the belt. That's why they resist being torn off by heavy cases. The special surface design allows the belt to *clean* itself as it flexes over the pulleys.

This remarkable new belt is obtainable at any of the 27 "U. S." District Sales Offices or by writing address below.

"U. S." Research perfects it . . . "U. S." Production builds it . . . U. S. Industry depends on it.

UNITED STATES RUBBER COMPANY

MECHANICAL GOODS DIVISION · ROCKEFELLER CENTER, NEW YORK 20, N. Y.

Hose • Belting • Expansion Joints • Rubber-to-metal Products • Oil Field Specialties • Plastic Pipe and Fittings • Grinding Wheels • Packings • Tapes Molded and Extruded Rubber and Plastic Products • Protective Linings and Coatings • Conductive Rubber • Adhesives • Roll Coverings • Mats and Matting

For more details circle No. 14 on Reader Service Postcard

See Directory listing page 123, Yellow Section

Tell 'em with **"Talking Tape"**



Flash-Tite printed "Talking Tape" makes a live-wire salesman of every carton. Sparks up your product. Broadcasts your sales messages. Identifies. Instructs. Cautions. Yet "Talking Tape" messages cost only a fraction of what special labels would cost. For further information or samples, write Dept. GT.

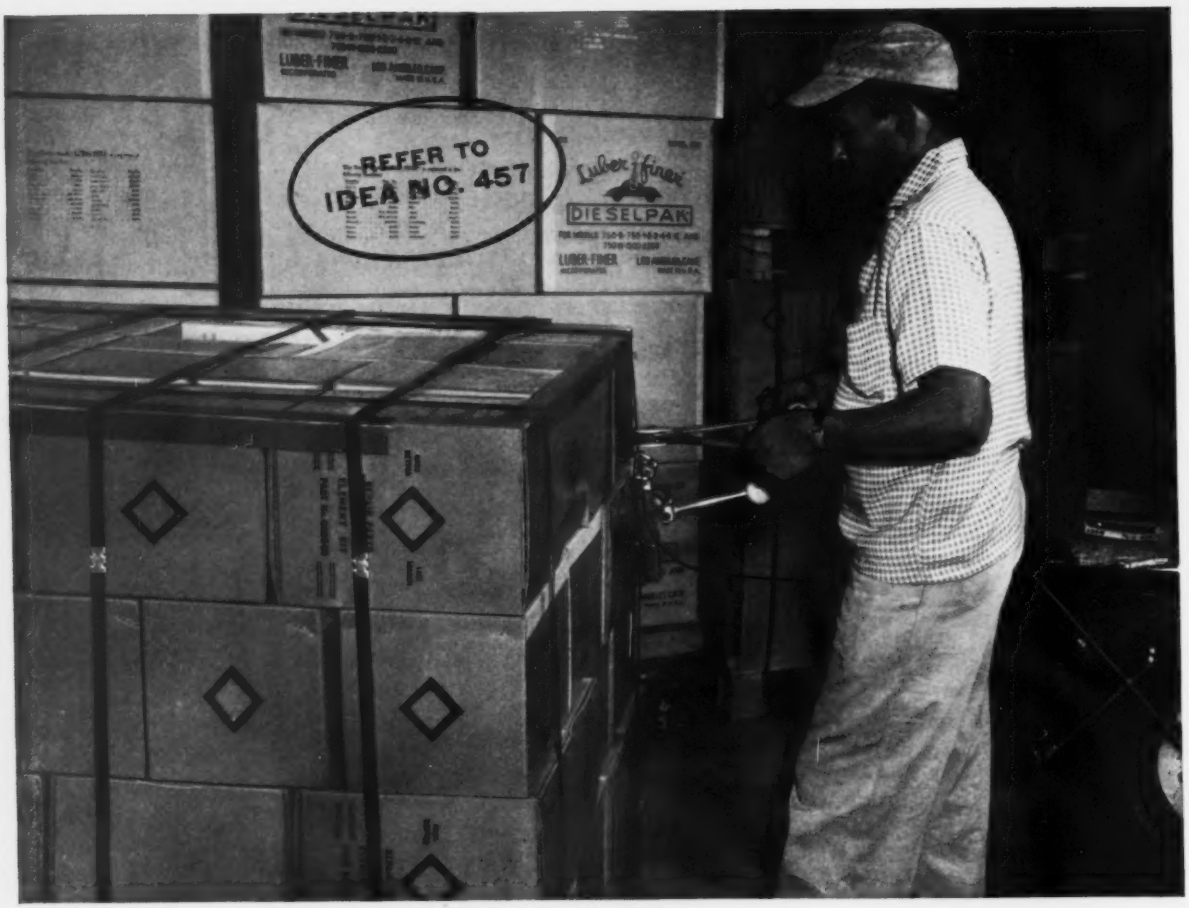


IMPROVED FORMULA

FLASH-TITE "TALKING TAPE"

CROWN ZELLERBACH 343 Sansome Street, San Francisco 19, California

For more details circle No. 15 on Reader Service Postcard



AIM* to move many packages as easily as one with Acme Steel strapping



*Acme Idea Man, Bob Rosenberg cooperated with the Luber-Finer, Inc. in this steel strapping method

ask your *Acme Idea Man to help solve your problems

By unitizing with the aid of Acme Steel Strapping, Luber-Finer Inc., Los Angeles, now moves 80 boxed filters as a unit. (Idea No. 457.) Trucks are ready for shipment in one-third the time formerly needed. Customers also benefit by less handling.

Acme Steel Strapping assures safe and secure palletized loads. By unitizing with steel strapping, inventory is simple and easy; labeling is faster and handling losses are minimized.

Your Acme Idea Man is ready and willing to pass along valuable ideas that can help you move more packages as one. He is helping thousands of shippers with easier, faster and better methods. Let him analyze, demonstrate and recommend. He has the ideas. They are yours without obligation. Consult your local classified phone book or write for further information to Dept. HJ-85.

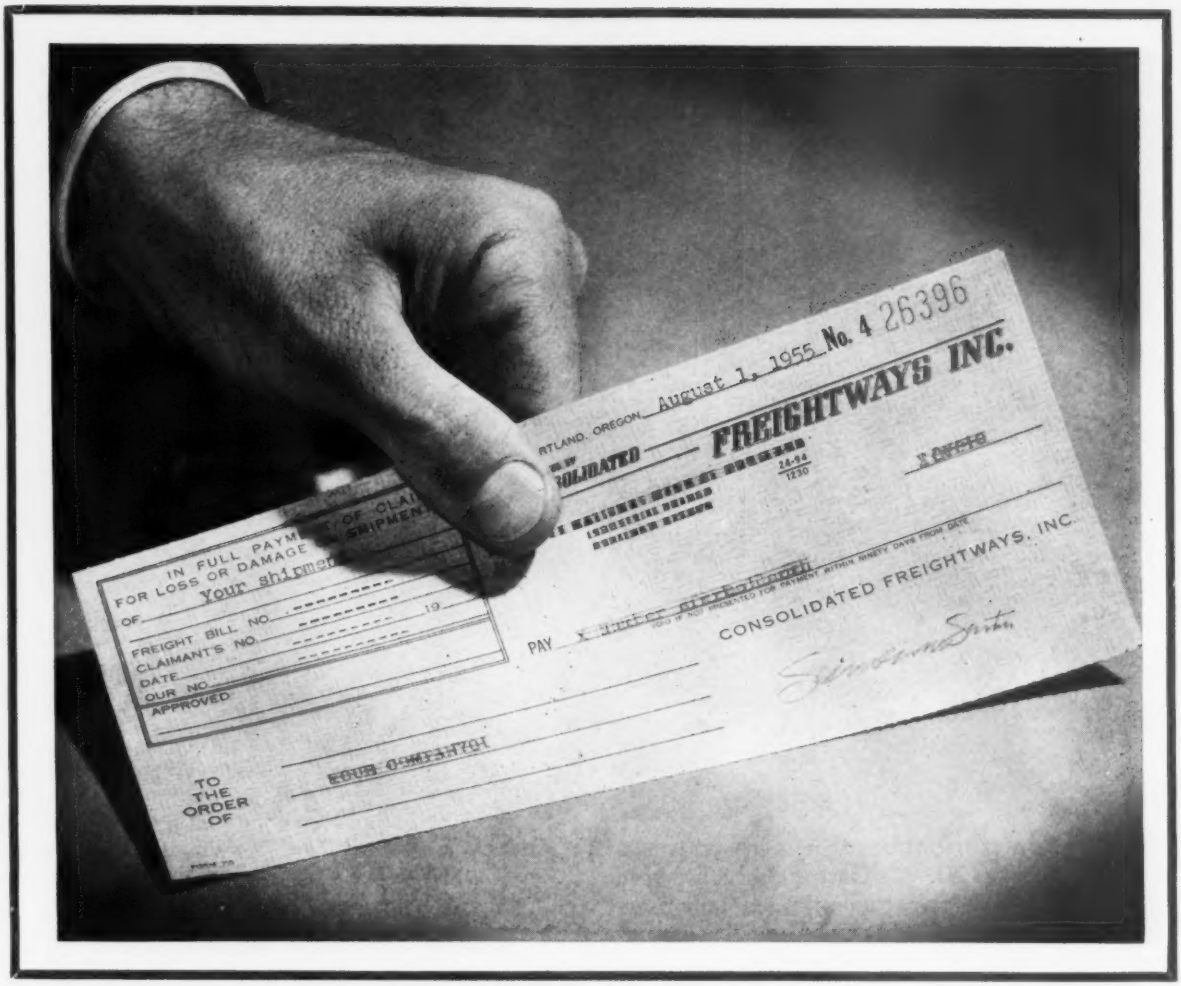
ACME STEEL PRODUCTS DIVISION

ACME STEEL COMPANY

2840 ARCHER AVENUE, CHICAGO 8, ILLINOIS • ACME STEEL CO. OF CANADA, LTD., TORONTO

ACME STEEL

For more details circle No. 16 on Reader Service Postcard
See Directory listing page 102, Yellow Section



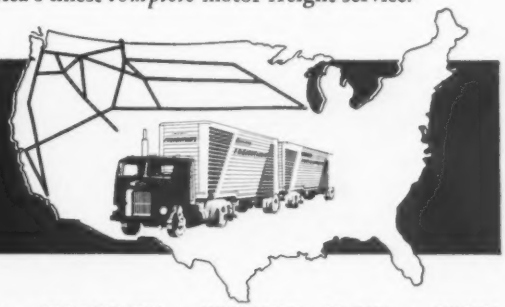
FEWER CLAIMS...AND SETTLED FASTER

Shippers appreciate prompt payment of freight claims, and Consolidated Freightways settles most claims *in less than 10 days.* Even more important is *claims prevention*...the elimination of needless loss and damage. CF has a claims prevention program that gets results because...

● *A successful safety program reduces damage due to accidents.* ● *Efficient security cuts loss due to theft.* ● *Freight flows safely in mechanized terminals.* ● *An effective educational plan trains drivers and loaders in the safest and best handling techniques.*

Safer handling and faster claims settlement—another reason why shippers find it more convenient to deal with Consolidated Freightways, America's finest *complete* motor freight service.

CONSOLIDATED FREIGHTWAYS



SEATTLE • PORTLAND • SAN FRANCISCO - OAKLAND • LOS ANGELES • SPOKANE • SALT LAKE CITY • MINNEAPOLIS - ST. PAUL • CHICAGO

Terminals in 49 other key cities from the Pacific Coast to the Great Lakes... Thru service to all major eastern cities

For more details circle No. 17 on Reader Service Postcard

Pace-Setting HD-5G Tractor Shovel

NOW BETTER 3 WAYS

FOR EFFICIENT MATERIAL HANDLING



HD-5G TRACTOR SHOVEL

Rated capacity	1¼ cu yd
Belt horsepower	50
Weight, complete	16,200 lb
Dumping height	9 ft, 2 in.

From the time of its introduction seven years ago, the Allis-Chalmers HD-5G Tractor Shovel has been tops in popularity. Many thousands are daily proving their ability and versatility on all kinds of material handling and excavating jobs.

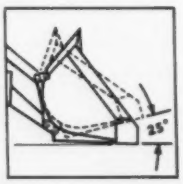
Now, design refinements make the HD-5G a three-way better value than ever before:

1. Has Bigger Rated Capacity

New bucket handles a big 1¼-yd load — streamlined design now helps roll in large loads with less tractor effort. The back of the bucket has been brought forward and the sides extended to cut spillage, put more payload where it's wanted.

2. Helps the Operator Do More

Cleaner dumping with the new bucket saves the operator time and effort shaking out loads.

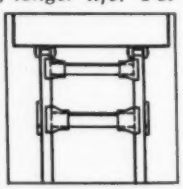


For added versatility, there is a two-position bucket available with both standard automatic return to digging position and operator-controlled tip-back. If the operator chooses to use the controlled tip-back, he can load the bucket, then tip it back approximately 25° before raising, assuring maximum output under special conditions such as downhill loading or loading loose materials.

The HD-5G helps the operator do more in other ways, too — giving him full vision, fast and easy control, cleaner platform and more comfortable seat from which to work, and more working time with truck wheels, support rollers and idlers that need greasing only once every 1,000 hours.

3. Works at Lower Cost

The HD-5G now works at even lower cost than ever before — not just because it *does more*, but because it has features that mean *less maintenance, longer life.* For instance, new type tubular bracing on the bucket booms provides added strength and support, keeps the bucket in line. The floor at the rear of the new bucket has been raised seven degrees to reduce wear on the bottom sheet. Heavy-duty truck wheels and idlers are available for particularly tough working conditions. One-piece, full-length main frame permits unit construction so that major assemblies can be removed without disturbing adjacent units, putting tractor back on the job in hours rather than days.



Ten Quick-Change Attachments Add to HD-5G Versatility

Bulldozer	Crane Hook	Tine Fork
Angledozer	Light Material Bucket	Rock Fork
Narrow Bucket	Trench Hoe	— also rear-mounted Ripper
Rock Bucket	Lift Fork	

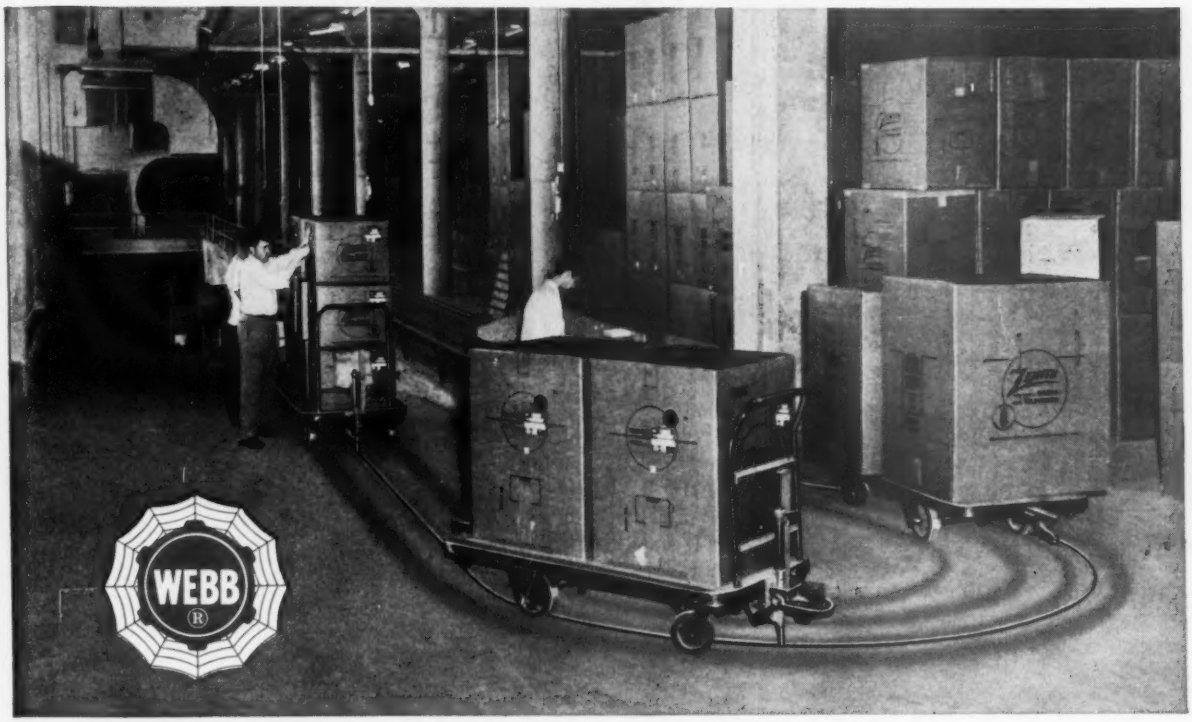
See your Allis-Chalmers dealer for more about these and other production-boosting features of the popular HD-5G Tractor Shovel.

ALLIS-CHALMERS
TRACTOR DIVISION • MILWAUKEE 1, U. S. A.

For more details circle No. 18 on Reader Service Postcard
See Directory listing page 102, Yellow Section

JERVIS B. WEBB

CONVEYOR ENGINEERING, MANUFACTURE, INSTALLATION and AUTOMATION



A TOWVEYOR THAT RUNS FROM FLOOR TO FLOOR?

Yes, for the first time, here is a Towveyor installation that also travels up and down concrete ramps, providing a smooth and constant flow of materials between floors. This modern Towveyor installation is the backbone of materials handling in this huge plant. Nearly 4,000 feet of Towveyor track winds its way through the various departments, bringing cabinets and other materials in, and removing finished TV sets to storage or shipping.

The Towveyor system consists of a motor driven endless chain that travels in a trough in the floor. Material is carried on 750 tow trucks. Each truck is equipped with a tow pin which is manually lowered into a narrow continuous slot in the floor to engage the Towveyor chain. Trucks are disengaged from chain by raising tow pin. Tow pin is spring locked in the up position and locked in a slot in the down position for positive safety on both flat and ramp travel of tow trucks.

This efficient Towveyor system provides faster and better regulated flow of cabinets from receiving docks to warehouse. Finished radios and television sets are smoothly moved from final assembly to shipping. Picture tubes, component parts and even corrugated cartons are carried in a carefully coordinated manner to their proper stations. Maximum daily capacity of system is 10,000 cabinets delivered to warehouse and 10,000 finished sets to shipping.

Webb engineering ingenuity and design experience can also provide a better answer to your materials handling problems. Up and down, and all around your plant, Webb conveyors engineered to your specific needs are best.

Visit us at "The Production Engineering Show" — Navy Pier, Chicago • September 6 to 16, 1955 • Booth 518

Write to us on your company letterhead and we will be happy to place your name on the Webb mailing list to receive factual technical information on conveyor installations, case history reports, and new product literature.

JERVIS B. WEBB CO. of CALIFORNIA

9301 RAYO AVENUE • SOUTH GATE, CALIFORNIA

Specialists in Custom Conveyor Systems

2166 MARKET STREET
SAN FRANCISCO 14, CALIF.

OTHER WESTERN OFFICES:
4305 EMERSON STREET
SEATTLE 99, WASHINGTON

52 W. 2ND S. STREET
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Offices and Representatives Throughout The World • FACTORIES: *Detroit* • *Los Angeles* • *Hamilton, Canada*

For more details circle No. 19 on Reader Service Postcard
See Directory listing page 123, Yellow Section

Western Industry

EDITORIALS

An electric shock

AFTER ALL THE TALK about there not being enough electricity in the Pacific Northwest to go around, Great Northern Railway pops up and says, "You can have our share; we've found something better." Such heresy!

For long years Great Northern has had an electrified segment of its line through the Cascades. The Milwaukee also uses electric power to pull its trains over the Cascade grades. Now Great Northern has turned to diesel locomotives, making this electrification unnecessary. Will the Milwaukee follow suit?

We were curious whether Great Northern's decision to abandon the sacred white cow of electricity and take up with such an unsanctified pup as diesel fuel would save much current. Great Northern reported that in 1953, the last peak year when use of diesel locomotives was not being tested in that area, 40,483,259 kwh. were consumed. Maximum peak demand at any time has been 22,000 kw., which we understand is about .4% of total peak in the Pacific Northwest. But even that figure does not mean much, for an electric locomotive on the downgrade acts as a generator and feeds back into the line nearly as much current as it consumes going uphill.

Shades of Paul Raver, TVA, Hell's Canyon, and the Dinosaur National Monument! Don't tell us that electricity could go out of style!

Instruments will do it

WITHIN only a few more years, the average worker will be required to produce 30% more than he produces today, according to Warren O. Brand, president of the Instrument Society of America. Further use of instruments and controls will do it, he says.

He points out that whereas only ten years ago an instrument engineer or an instrument technician was an employee assigned to selecting or servicing instruments necessary to the operation of a plant or a process, today these people are a proud profession numbering in the thousands, with the demand far greater than the supply and the schools hastening to remedy the deficiency.

It is well recognized that petroleum refineries and chemical plants are practically built around instruments and controls. But it is not so well known that pilot plants in these same industries are able to employ instrumentation in much the same manner, and that our canneries, wineries, and paint factories in the West have made great strides in the last five years in the use of instruments and controls. Of course reference to the dependence of aircraft and missiles on such equipment is superfluous.

All these forward steps enable us to "work smarter, not harder," as the headline over the lead article in the April issue of WESTERN INDUSTRY said. The man condemned to till the soil is learning that he can do it by remote control.

Real Santa Claus

IT'S quite the popular sport to call Uncle Sam "Santa Claus," because of all the free things he hands out in the hope of getting votes. Actually, there is a really legitimate Santa Claus in the Department of Commerce in the business service it provides regarding patents and research reports.

Any company contemplating product expansion or diversification would do well to find out about the patents available on a royalty-free basis resulting from the government's annual $1½ billion expenditure on research and development.

For example, here are a few samples that John Judge and Merrill Woodruff of the San Francisco office of the Department collected for WESTERN INDUSTRY of patents available for free licensing, which already have been successfully used by some manufacturers:

New magnetic clutch.

New process for nickel plating.

New method of protecting boilers from embrittlement.

Many new fields of antibiotics and drugs —one well known by its "aerosol" bomb application (already licensed to 95 manufacturers).

Method of preparation of full-flavored fruit juice concentrates (so extensively used that it now consumes nearly 55% of the orange crop).

Method for processing foods through dehydro freezing.

Process for dried egg powder which eliminates off-flavor and odors even during long storage periods.

There are plenty more leads available for anyone willing to take a bit of time.

Announcing the new

WAYNE



Sweeps over 100,000 square feet per hour!

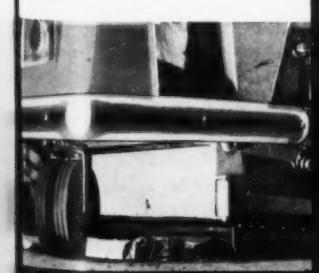
World's Finest most advanced power sweepers!

Completely new years-ahead power sweepers engineered to outlast, outperform any other sweeper!

Only the producers of the famous Wayne Street Sweepers could make a power sweeper so rugged, dependable and efficient. It's *performance* that counts, and these exclusive features make the new Wayne the most economical and practical power sweeper you can buy! • New Advanced design with automotive-type steering affords greater maneuverability. • Largest Hopper Capacity. • Vacuum Cleaning Hose Connection. • Extra Power gives greater sweeping capacity, ability to climb the steepest grades.

"power-flex" action

Enables Wayne to pick up larger objects or to travel without sweeping if desired.



power dumping

Hydraulically operated while driver is seated. Disposes of refuse in one quick, simple operation.



"filter-vac" dust control

A revolutionary new design principle. High velocity fan deposits fine dust into main dirt hopper automatically. No dust bag to empty.



"reach-easy" controls

All control levers can be operated by driver while seated. Provides for maximum safety and control.



WAYNE MANUFACTURING CO.

World's Largest Producer of Power Sweepers for Cities and Industry

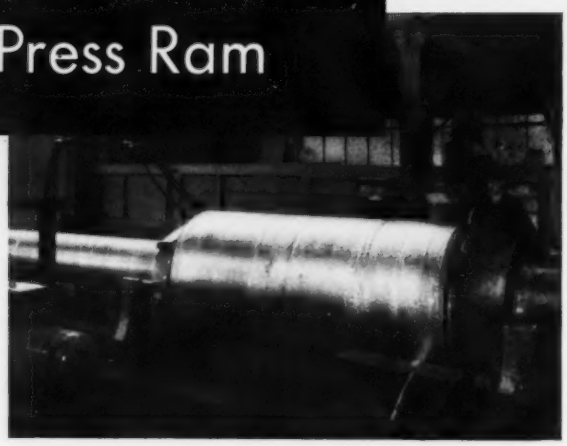


Write for new illustrated literature and further information to: WAYNE MANUFACTURING CO.
1229 E. Lexington Street • Pomona, California
Dealer Inquiries Invited.

For more details circle No. 20 on Reader Service Postcard



National Supply puts new life into 40-Ton Hydraulic Press Ram



The problem: This 80,000-pound main ram for a 4,000-ton hydraulic press had become severely pitted, corroded and worn with hard use. National was given the job of rebuilding the diameters of the ram with additional metal—then refinishing the surfaces.

The solution: To handle the job properly, National fitted a lathe with an adapter for a variable speed electric drive of extremely low RPM. After the ram was set in place, almost a ton of special stainless steel was applied to its surface by twin submerged arc welding. The diameters of the ends—each approximately ten feet long—were machined to very close tolerances.

The result: A precision-finished ram ready for dependable operation in the customer's hydraulic press. Big, specialized jobs like this are typical of the many that National handles daily. Complete facilities, engineering skill and experienced plant operators make National's Torrance Plant a logical source for western industry's unusual steel product needs. A letter or phone call will quickly bring you information on how National can work to your advantage.

THE
NATIONAL SUPPLY
COMPANY

INDUSTRIAL PRODUCTS DIVISION
Torrance, California • Los Angeles Area

Ideal Pressed Steel Forgings • Billets and Large Bars
Steel Castings and Special Machinery
Melting • Forging • Casting • Machining • Heat Treating
Assembling • Welding • Testing

For more details circle No. 21 on Reader Service Postcard

On leading high output packaging machinery— long life DIAMOND ROLLER CHAINS



Pure-Pak* disposable milk container pours like a pitcher.
*Division of Ex-Cell-O Corporation



International Banding Machine shown banding frankfurters. Diamond #66 Chain is shown with special attachments.



This case set-up machine uses Diamond Roller Chains with spacer bar attachments for conveying cases through the machine.



Box Sealing Labeler using Diamond Roller Chains is manufactured by the Oliver Machinery Company of Grand Rapids, Michigan.

• Packaging machinery *must* operate reliably to keep the cost of packages used for so many products at a very minimum. Stoppages are costly—since packaged goods are in most cases high production items, such as razor blades, bread, butter, milk.

• Every package design makes new demands on the engineer and on the machinery he designs. For each packaging and conveying problem there is a Diamond Chain manufactured with precision and famous Diamond uniform high quality. Many types of attachment links are immediately available. Diamond Engineers will be glad to give you experienced help in solving unusual conveying and packaging problems.

Write for special Double-Pitch Chain Bulletin #34

Always Preloaded

For many, many years, Diamond Chain has been preloaded after assembly for the purpose of bringing pin-bushing seating into stabilized relationship prior to field installation.

Shot-Peening Since 1944

Diamond Chain has long recognized that certain types of internal stressing of chain parts would increase fatigue resistance. To this end, link plates have been specially processed and chain rollers and other parts have been shot-peened since 1944.

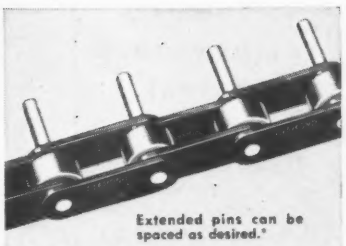
DIAMOND CHAIN COMPANY, Inc.

Where High Quality is Traditional

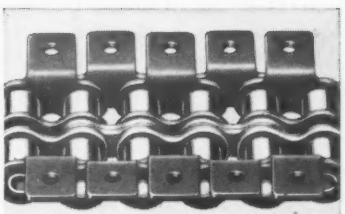
Dept. 606, 402 Kentucky Ave., Indianapolis 7, Ind.

Offices and Distributors in All Principal Cities

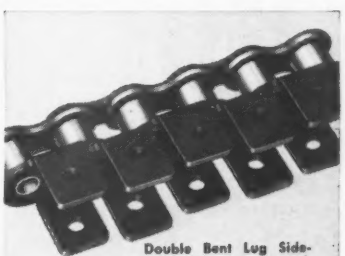
Please refer to the classified section of your local telephone directory under the heading CHAINS or CHAINS-ROLLER



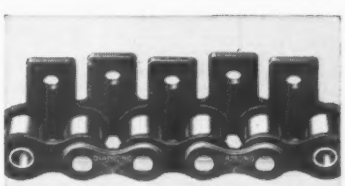
Extended pins can be spaced as desired.*



Bent Lug Plates on each side, every link.*

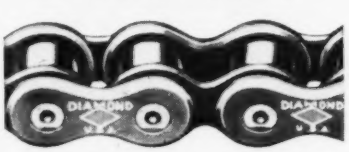


Double Bent Lug Sideplates for one or both sides of Chain.*

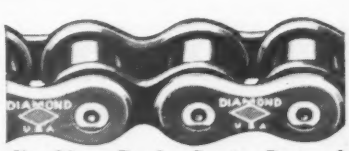


Straight Lugs on one side, every pitch.*

*Standard Attachments



DIAMOND ROLLER CHAINS



For more details circle No. 22 on Reader Service Postcard

See Directory listing page 108, Yellow Section

HERE'S A TIP ON CHROMIUM PLATING

INSTALL POWERS Automatic Temperature Control For All Metal Finishing Processes

For plating tanks and other metal finishing processes. Powers Controls quickly pay back their cost by accurately holding solutions at a constant uniform temperature.

POWERS 3

TECHNICAL DATA SHEET
CHROMIUM

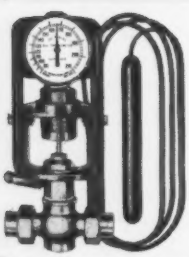
IF you plate—CHROMIUM

***Too high a temperature* can result in:**

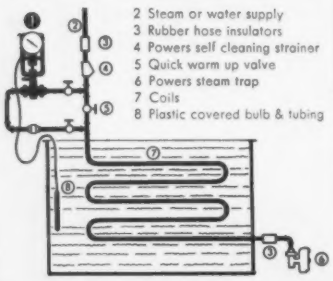
1. Burnt deposits
2. Frosty deposits
3. A decrease in cathode efficiency
4. A loss in throwing power
5. A soft deposit

***Too low a temperature* can result in:**

1. A slow rate of plating
2. Milky deposits
3. A decrease in tensile strength
4. A decrease in deposit density
5. Cracked deposits
6. Dark deposits

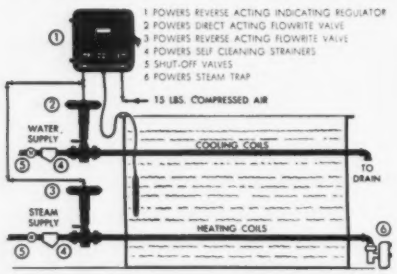


1 POWERS No. 11MF Self-Operating TEMPERATURE INDICATING REGULATOR



2 Steam or water supply
3 Rubber hose insulators
4 Powers self cleaning strainer
5 Quick warm up valve
6 Powers steam trap
7 Coils
8 Plastic covered bulb & tubing

COMPRESSED AIR OPERATED CONTROLS FOR PRECISE CONTROL OF HEATING and COOLING



In plating tanks, washers, heat exchangers, degreasers, Powers Temperature Controls more than pay for themselves. They save by stopping costly *over* or *under* heating.

Regardless of the size of your plating operation, there's a Powers Temperature Control precisely suited to your needs.

(c27)

THE POWERS REGULATOR COMPANY
SKOKIE, ILLINOIS • OFFICES IN CHIEF CITIES IN U.S.A. AND CANADA • SEE YOUR PHONE BOOK

THE POWERS REGULATOR COMPANY, 3400 Oakton Street, Skokie, Illinois

☐ Please send Bulletin 330 and Prices on Powers No. 11-MF Temperature Regulator for_____ (Print name of process or type of plating)

☐ Send Bulletin and Prices on Temperature Control for: ☐ Heat Exchangers ☐ Washers ☐ Degreasers

Name_____ Title_____

Company_____

Address_____

. . . for more details circle No. 23 on Reader Service Postcard
See Directory listing page 118, Yellow Section

LETTERS

Contributions to this column from our readers are welcome. Names will be withheld from publication if requested. Unsigned letters will be disregarded.

Copper machining problems

Editor, WESTERN INDUSTRY:

We machine small copper parts on our Greenlee 6-spindle collet chucker. Our problem is keeping the cutting edge on our tools. The machine is down due to tool trouble more than we feel is normal.

Please arrange to have an article written giving the recommended tools and coolants for obtaining the best results for machining electrolytic copper.

E. L. WILLIAMS
Process Engineer
Linde Air Products Co.
Division of Union Carbide & Carbon Corp.
Los Angeles

Editor's note—G. R. Fahey, technical industrial advisor for Revere Copper and Brass, Inc., in Los Angeles, says:

"Electrolytic copper is one of the most difficult of the copper base alloys to machine, having a machinability rating of 20 as compared to 100 for free-cutting brass rod. We usually recommend the use of a free-cutting copper such as tellurium where any amount of machining is to be done and where electrical conductivity is not of major importance. The tellurium copper has a machinability rating of about 80 to 90.

"We do not believe that we could add much to the information set forth in the publication of the Copper and Brass Research Assoc., entitled 'Copper Base Alloy Rod Handbook,' concerning the machinability data for copper. We have arranged to have one of these books sent to Mr. Williams and it should be in his hands within the next few weeks."

Interested in corrosion cure

Editor, WESTERN INDUSTRY:

Please send us an April 1955 issue if available. If not, tearsheets or reprint of the article on corrosion appearing on page 30.

V. C. SANDERS
The California Co.
New Orleans 12, La.

Less Idle Time

WITH

MOTO-TRUC*



* To make an investment in a lift truck is one thing . . . to make it *pay* is another. The amount of idle time logged against a truck is a major factor in whether a truck is "paying its way."

MOTO-TRUCS offer *LESS* Idle time because of simplified operator controls. Their patented *Roller Grip Controls* make it easy for practically anyone in your plant to operate the truck . . . and remember . . . There's a MOTO-TRUC for every purpose.



Simplified Roller Grip Controls



Send for Bulletin No. 54

MOTO-TRUC
Designers FOR THE INDUSTRY
PATENTED

The MOTO-TRUC Co.

Representatives in Principal Cities

1963 E. 59th St. • Cleveland 3, Ohio
Pallet . . . Platform . . . Hi-Lift Trucks
LARGEST EXCLUSIVE MANUFACTURER OF "WALKIES"

For more details circle No. 24 on Reader Service Postcard
See Directory listing page 116, Yellow Section



. . . for more details circle No. 25 on Reader Service Postcard

CALENDAR OF MEETINGS

AUG. 15-26—*Training Conference and Workshop for Industrial Sales Representatives*, Santa Barbara College, University of California, 129 E. Carrillo St., Santa Barbara, Calif. Contact Professor John A. McClure.

AUG. 22-23—*Symposium on Electronics and Automatic Production*, sponsored by Stanford Research Institute and National Industrial Conference Board, Sheraton-Palace Hotel, San Francisco. Contact Public Relations, Stanford Research Institute, Stanford, Calif.

AUG. 24-26—*Western Electronic Show and Convention*, Civic Auditorium and Fairmont Hotel, San Francisco. Contact Mal Mobley Jr., Business Manager, 344 North La Brea Ave., Los Angeles 36.

AUG. 28-30—*Liquefied Petroleum Gas Assoc.*, District 2 convention and trade show, Sheraton-Palace Hotel, San Francisco. Contact LPGA, Inc., 11 S. LaSalle St., Chicago 3.

AUG. 31-SEPT. 3—*7th Annual Summer Management Conference*, Awahnee Hotel, Yosemite. Contact Burt W. Miller, coordinator of management programs, Institute of Industrial Relations, University of California, Berkeley, or Edward L. Hearsey, assistant director of management programs, Institute of Industrial Relations, UCLA, Los Angeles.

SEPT. 1-2—*Western Economic Assoc.*, Stanford University, Stanford, Calif. Contact Gault Lynn, president, c/o Economics Department, Stanford.

SEPT. 8-9—*Second Western Area Development Conference*, sponsored by Stanford Research Institute, American Industrial Development Council, and Pacific Northwest Trade Assoc., Multnomah Hotel, Portland. Contact Pacific Northwest Division, SRI, Suite 801-2 Equitable Building, Portland.

SEPT. 10-12—*1955 Instruments Maintenance Clinic*, Instrument Society of America, Founders Hall, University of Southern California, Los Angeles. Contact J. C. Groenewegen, Shell Chemical Corp., Torrance, Calif.

SEPT. 12-16—*Instrument Society of America*, 10th annual conference and exhibit, Shrine Exposition Hall and Auditorium, Los Angeles. Contact Fred J. Tabery, Fred J. Tabery Corp., 3443 S. Hill St., Los Angeles 7.

SEPT. 12-13—*2d Annual Pacific Northwest Industrial Health Conference*, sponsored by Portland Chamber of Commerce, Multnomah Hotel, Portland. Contact R. Walter Ager, attendance chairman, 824 S.W. Fifth Ave., Portland 4.

SEPT. 16—*2d Annual San Francisco Bay Area Quality Control Conference*, jointly sponsored by Stanford University and S. F. Section of American Society for Quality Control, Cubberly Auditorium, Stanford University. Contact Grant Ire son, Stanford Univ., Stanford, Calif.

. . . More on page 32.

A big plus... exclusive with Chevron!

"Detergent-Action" plus New Power!





+ New Power

The highest octane ratings in Chevron history are available now from Standard's newest method of refining gasoline! It means more power for your fleet cars in traffic, more pull for on- and off-highway trucks, more work from all gasoline-powered equipment.

+ "Detergent-Action"

the Chevron exclusive that *cleans out* carburetor deposits to end forever the biggest single cause of engine trouble! In addition, the refining improvements in Chevron Gasolines enable them to control a major source of harmful combustion acids—they can extend the life and power of your gasoline engines as much as 135%.

+ Balanced Performance

...from the combination of not 1, not 2... but *every* gasoline feature your engines need:

- **Detergent-Action**
- **Quick starting**
- **Area blending**
- **Vapor-lock protection**
- **Full power**
- **Smooth acceleration**
- **High anti-knock**
- **Economy mileage**
- **Fast warm-up**
- **Rust and corrosion prevention**
- **Longer engine life**

FOR EXPERT HELP on any fuel or lubrication problems, write or call your Standard Fuel and Lubricant Engineer or Representative, or write to Standard Oil Company of California, 225 Bush Street, San Francisco, California.

STANDARD OIL COMPANY OF CALIFORNIA

For more details circle No. 26 on Reader Service Postcard

CALENDAR

. . . Begins on page 30.

SEPT. 16-22—*American Society for Testing Materials*, Pacific Coast Meeting, Hotel Statler, Los Angeles. Contact offices of Society, 1916 Race St., Philadelphia 3, Pa.

SEPT. 22-24—*9th Pacific International Purchasing Agents Conference and Show*, Hotel Statler, Los Angeles. Contact S. H. Bellue, Hughes Aircraft Co., Culver City, Calif.

SEPT. 25-29—*Master Brewers of America* convention, St. Francis Hotel, San Francisco. Contact Henry Henius, convention chairman, 2601 Newhall St., San Francisco.

SEPT. 29-OCT. 1—*Joint Meeting of Southwest International Mining Assoc. and New Mexico Mining Assoc.*, El Paso, Tex.

SEPT. 30-OCT. 1—*Industrial Development Workshop*, University of Wyoming, Laramie. Co-sponsors: Wyoming Natural Resources Board; College of Commerce and Industry, University of Wyoming; Wyoming chapter of Commerce Executives. Contact Ken Monroe, secretary, Natural Resources Board, 210 Capitol Bldg., Cheyenne.

OCT. 5-9—*World Plastics Fair and Trade Exposition*, National Guard Armory, Exposition Park, Los Angeles.

OCT. 10-13—*American Mining Congress*, 1955 metal mining and industrial minerals convention, Las Vegas, Nev.

OCT. 12-14—*Gas Appliance Manufacturers Assoc.* annual meeting, Palm Springs.

OCT. 16-19—*55th Annual Meeting of Society of American Foresters*, Hotel Multnomah, Portland. Contact Lloyd Thorpe, Journal of Forestry, 604 Medical Arts Bldg., Seattle 1, Wash.

OCT. 17-19—*American Gas Assoc.-Pacific Coast Gas Assoc.* annual meeting, Los Angeles.

OCT. 18-30—*34th Pacific Coast Management Conference*, Hotel Claremont, Berkeley. Contact Everett Van Every, President, California Personnel Management Assoc., 2180 Milvia St., Berkeley 4, Calif.

OCT. 23-25—*Western Regional Frozen Food Convention*, Hotel Mark Hopkins, San Francisco. Contact Harry Lerner, Executive Secretary, 675 Monadnock Bldg., San Francisco.

OCT. 27-29—*Pacific Northwest Personnel Management Assoc.*, Davenport Hotel, Spokane. Contact Eric Brown, General Conference Chairman, c/o Spokane Chamber of Commerce, or phone RI-5161.

OCT. 30-Nov. 1—*Pacific Northwest Trade Assoc.* fall conference, Seattle, Wash. Contact Association office, Vance Building, Seattle 1.

OCT. 31-Nov. 1—*International conference on scientific basis of applied solar energy*, sponsored by Assoc. for Applied Solar Energy, Stanford Research Institute, and University of Arizona, to be held at Univ. of Arizona, Tucson.

Nov. 1-5—*World Symposium on Applied Solar Energy*, sponsored by Stanford Research Institute, Assoc. for Applied Solar Energy, and University of Arizona, Hotel Westward Ho, Phoenix. Contact Henry B. Sargent, president and general manager, Arizona Public Service Co., Phoenix.

Nov. 7-8—*California Fertilizer Assoc.*, 32nd annual convention, Hotel Mark Hopkins, San Francisco. Contact Sidney H. Bierly, executive secretary and manager, CFA, 475 Huntington Drive, San Marino 9, Calif.

Nov. 8-11—*American Council of Independent Laboratories, Inc.*, Hotel Westward Ho, Phoenix, Ariz. Contact Claude McLean, Arizona Testing Laboratories, 817 W. Madison St., Phoenix.

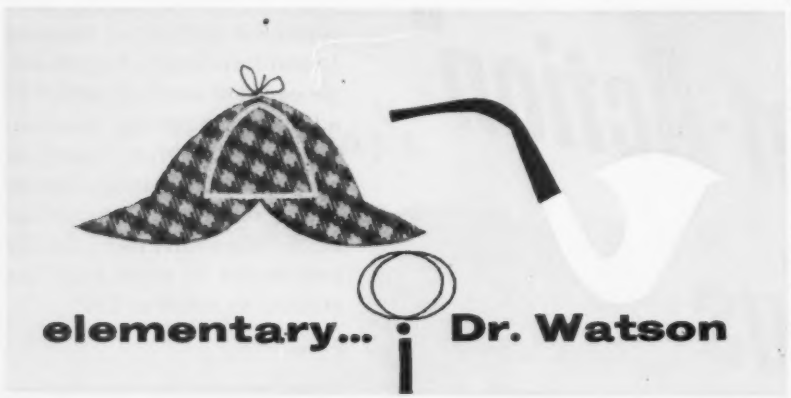
Nov. 9-10—*Council of Profit Sharing Industries*, 8th annual conference, Huntington-Sheraton Hotel, Pasadena, Calif. Contact John C. O'Keefe, field secretary, 919-D E. California St., Pasadena 5.

Nov. 14-17—*American Petroleum Institute* annual meeting, Fairmont, St. Francis, Palace, and Mark Hopkins Hotels, San Francisco.

Nov. 17-18—*National Assoc. of Corrosion Engineers*, Western regional meeting, Sir Francis Drake Hotel, San Francisco. Contact R. S. Treseder, Shell Development Co., Emeryville, Calif.

DEC. 2-3—*Northwest Mining Assoc.*, Davenport Hotel, Spokane. Contact Karl Jasper, c/o Spokane Chamber of Commerce, or phone MA 4822.

DEC. 7-9—*Western Frozen Foods Processors Assoc.*, Hotel Senator, Sacramento. Contact A. H. Harrison, managing director, 244 California St., San Francisco.

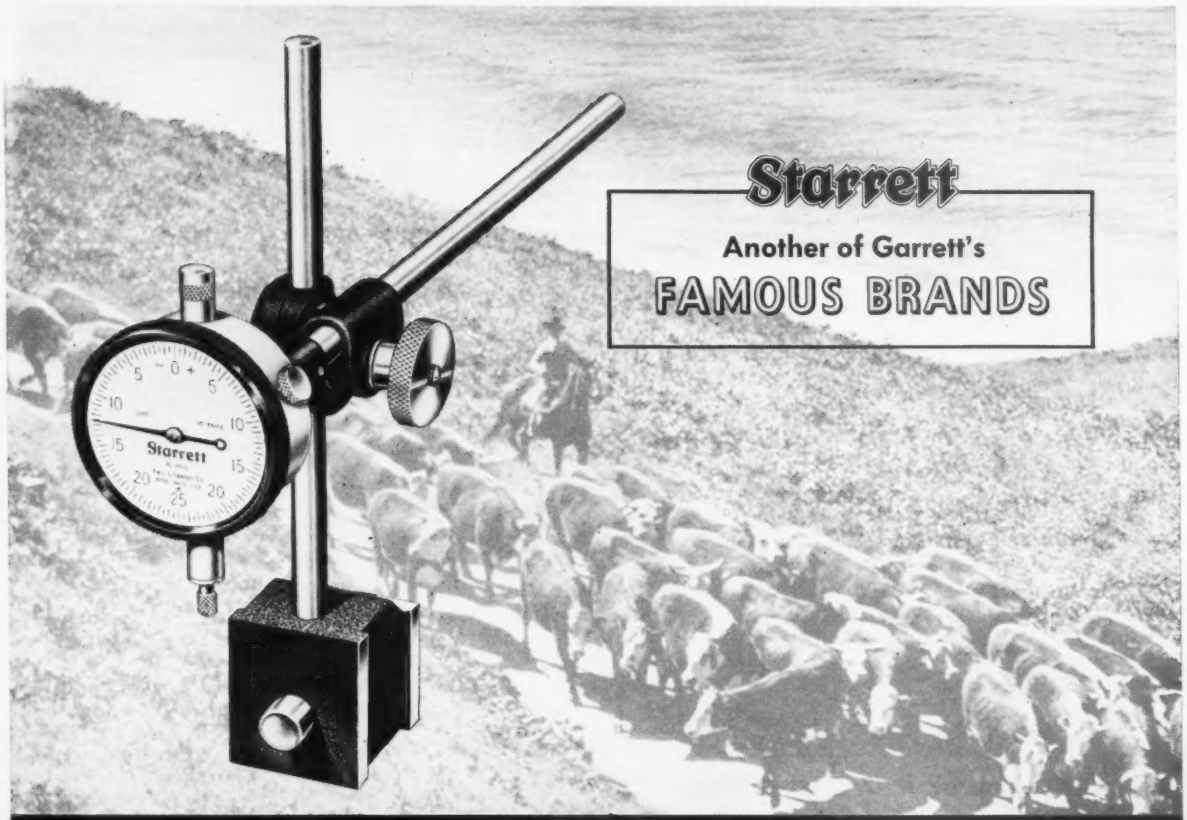


investigate

. . . and you'll find Martin Wirebounds give you . . .
- *Maximum product protection*
- *Low purchase price*
- *Minimum Shipping, crating and labor costs*
- *Less storage and warehousing costs*



. . . for more details circle No. 27 on Reader Service Postcard
See Directory listing page 116, Yellow Section



NEW STARRETT MAGNETIC BASE INDICATOR HOLDER ELIMINATES CLAMPS...ATTACHES TO ANY STEEL SURFACE!

Here is an indicator holder with a powerful, permanent magnet-type base that holds firmly when placed horizontally, vertically or upside down. Magnetic force can be turned on or off just by pushing a button. It shortens set-up time on any job requiring a dial indicator. It is another fine instrument manufactured by Starrett.

The complete Starrett line is one of more than 100 brands of tools and industrial supplies distributed by The Garrett Supply Company. Call us and you'll find our service as good as our supplies... the best. Whatever you need, "Get it from Garrett!"

HEADQUARTERS IN SOUTHERN CALIFORNIA AND ARIZONA FOR THESE AND OTHER FAMOUS BRANDS

Nicholson Files
Athol Vises
Starrett Band and Hacksaws
Yale and Towne Hoists
Chicago Latrobe Drills
J. H. Williams Tools
Boston Gears

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GARRETT
SUPPLY COMPANY

3844 South Santa Fe Ave., Los Angeles 58, California
130 West Madison St., Phoenix, Arizona

a division of **THE GARRETT CORPORATION**

For more details circle No. 28 on Reader Service Postcard

NEW SUPER RAYNILE CONVEYOR BELT 400% STRONGER

Provides the economical answer to transporting coal, ore, crushed stone and other bulk materials over long distances and up steep slopes.

This remarkable new Hewitt-Robins conveyor belt reinforced with the revolutionary synthetic fabric, Super Raynile, makes possible an entirely new concept in single-section conveyor application. It solves difficult materials handling problems where topography and other conditions require the use of a long single-length conveyor.

Already in service, Super Raynile has the highest operating tension of any conventional carcass belt. Because of its tremendous tensile strength, 400% greater than conventional cotton reinforced belts, a single conveyor section *5¾ miles long* can be built over level terrain to carry material at 400 TPH using only a 6-ply Super Raynile belt 30 inches wide. This same belt can also lift material from ground level to a height of 830 feet.

The new Hewitt-Robins Super Raynile conveyor belt is highly flexible and pliable despite its great strength. Its cost is less than steel-reinforced belts and Super Raynile can easily be spliced in the field more quickly, more economically and without the specialized equipment required to splice steel-reinforced belts.

Super Raynile belt is available in a wide range of specifications . . . widths up to 72"—thickness up to 15 plies.

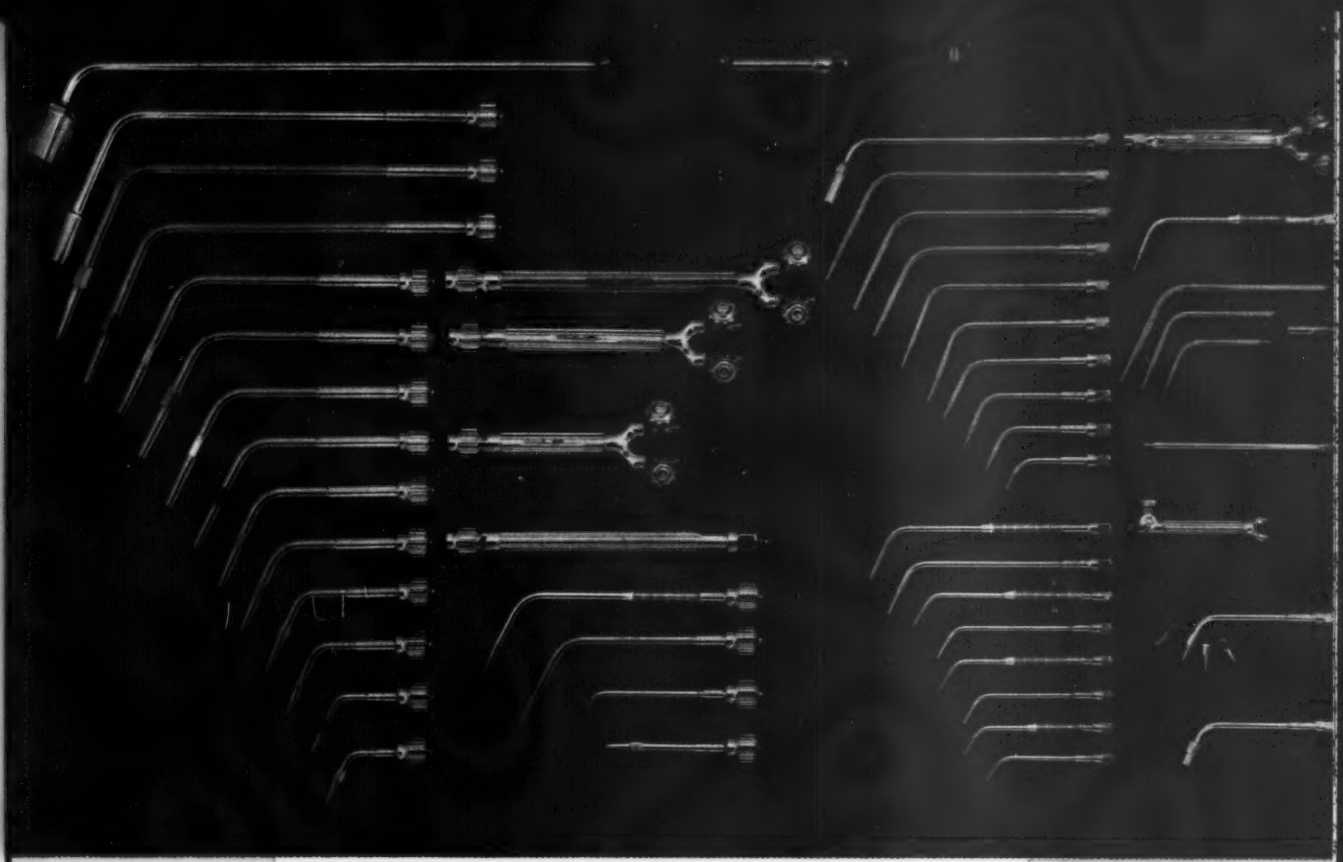
Learn more about this new long-length, long-life conveyor belt. Contact your local Hewitt-Robins Industrial Supply Distributor (see Classified Phone Book), or write direct to "Super Raynile Belt", Hewitt-Robins Incorporated, Stamford, Connecticut.

Hewitt-Robins

Conveyor Belting—Industrial Hose—Conveyor Machinery—Vibrating Screens—Vibrating Conveyors—Design, Manufacture, Engineering and Erection of Complete Bulk Materials Handling Systems.

HEWITT-ROBINS INCORPORATED • STAMFORD, CONNECTICUT

For more details circle No. 29 on Reader Service Postcard
See Directory listing page 112, Yellow Section
For more details, adv. opposite page, circle No. 30 on Reader Service Postcard→



Fit the flame to the job with VICTOR nozzles and tips

Why lose time and waste gas with a "misfit" flame? Start *right* with a Victor torch, match the flame to *any* job with Victor interchangeable nozzles and tips. Victor torches that "grow with the job" cost no more, pay you plenty in faster, better work. See them at your Victor dealer's today, or write *now* for catalog.

VICTOR for welding

VICTOR EQUIPMENT COMPANY

Mfrs. of welding & cutting equipment; hardfacing rods, blasting nozzles; cobalt & tungsten castings; straightline and shape cutting machines.

844 Folsom St.
San Francisco 7

3821 Santa Fe Avenue
Los Angeles 58



BUILDING THE LITTLE CLICK THAT SAYS ALL IS WELL

Every pilot who ever flew an airplane knows that the world's most reassuring sound is the little click that says "landing gear down *and locked.*" It's important because it means a safe landing. It insures coming in on your wheels instead of your belly.

Providing that reassurance is the job of Menasco Manufacturing Company, which specializes in the design and manufacture of landing gear components for the country's leading airframe manufacturers. Critical landing gear design and construction factors include weight conservation, space limitation, faster and more economical production methods, and the increasing takeoff and landing speeds of modern aircraft.

Since 1943 Menasco has been welding B&W aircraft quality tubing of 4340 steel to various kinds of forged shapes to produce the completed piston or cylinders. Menasco's improved pressure welding, called Uniweld, produces high-quality parts that cannot be produced in a single piece by conventional forging methods. The strength and quality of these Uniweld parts is equivalent to that obtained if it had been possible to produce them in a single forged piece.

For your own equivalent of "the little click that says all is well," insist on B&W Mechanical Tubing. Mr. Tubes, your link to B&W, has the whole story. *Or write for Bulletin TB-361. WI*

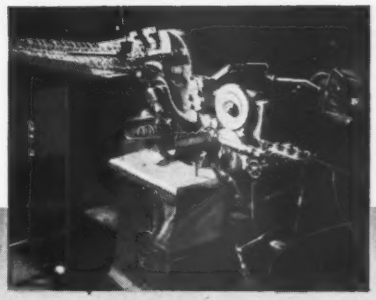
B&W
TUBULAR PRODUCTS DIVISION

THE BABCOCK & WILCOX COMPANY
TUBULAR PRODUCTS DIVISION
Beaver Falls, Pa. and Milwaukee, Wis.: Seamless Tubing, Welded Stainless Steel Tubing
Alliance, Ohio: Welded Carbon Steel Tubing
Milwaukee, Wis.: Seamless Welding Fittings

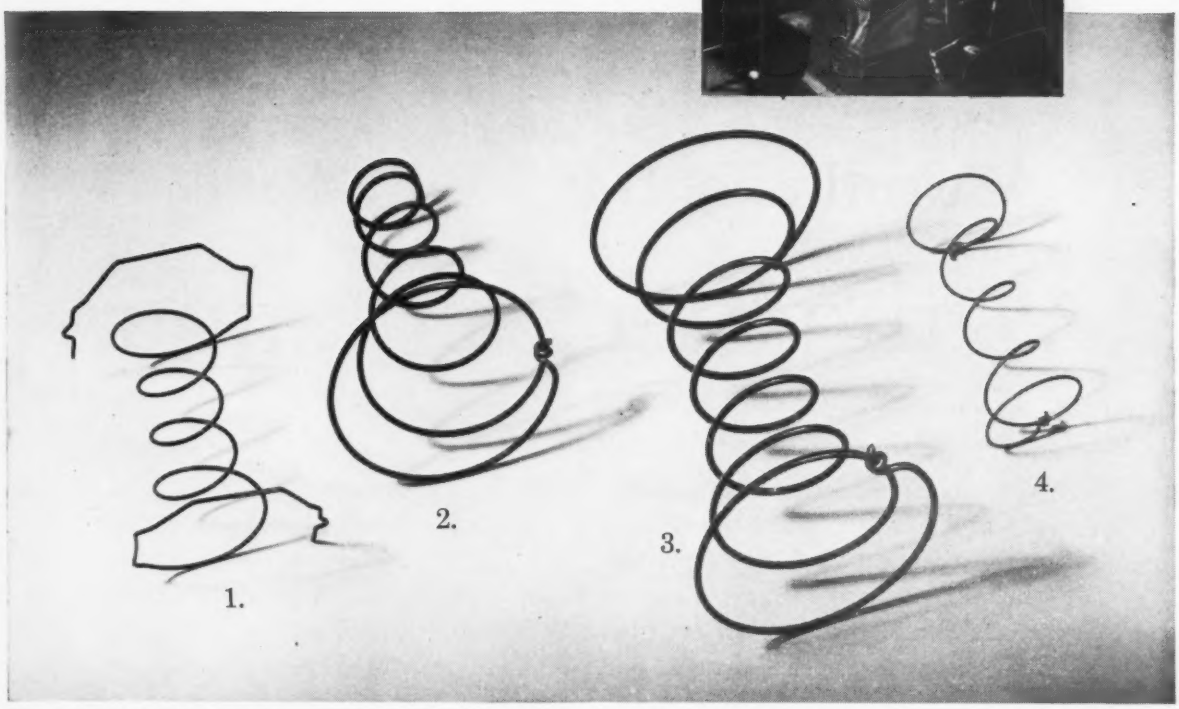
TA-5044(M)

111 Wilshire Blvd., Los Angeles 17, Calif.; 785 Market Street, San Francisco 3, Calif.

For more details circle No. 31 on Reader Service Postcard



Fed with 10 gauge USS Wire, this Automatic Cone Coiler produces finished coils for box springs —like No. 2 below.



A sample of standard springs manufactured by Ideal Spring Co.: 1) A coil made clockwise to government specifications; 2) Cone coil used in box springs; 3) 8½" high upholstery coil for living room furniture; 4) Spring used in mattress units.

Quality wire helps eliminate production problems

"Never have we had production troubles or a kick-back from customers because of faulty wire," says Mr. Pete Kudenoff, owner of the Ideal Spring Company. "So naturally, we're happy with the dependable quality of USS Manufacturers Wire." This Los Angeles wire user manufactures springs and supplies assembled spring units to brand name furniture and mattress makers throughout the country.

No matter how specialized your requirements, Columbia-Geneva can produce wire that will fit your needs exactly. With the greatest wire-making facilities in the West, Columbia-Geneva can supply more than 1000 types, grades and finishes of USS Manufacturers Wire. There are USS Wire Specialists always ready to help you select the right wire for your job. If there isn't a United States Steel service office conveniently near you, you are invited to call or write: Columbia-Geneva Steel Division, 1403 Russ Building, San Francisco 6.

Free Booklet! WI-8

UNITED STATES STEEL CORPORATION
COLUMBIA-GENEVA STEEL DIVISION
1403 RUSS BLDG., SAN FRANCISCO 6, CALIF.

Please send me your free, informative booklet that shows how USS Manufacturers Wire can be tailored to fit my needs.

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*Address*_____

*City*_____ *State*_____

Wire that's tailored to fit your needs

USS Manufacturers Wire

UNITED STATES STEEL

For more details circle No. 32 on Reader Service Postcard
See Directory listing page 107, yellow section

A word about
the Steel Situation

You may be wondering what new supply problems you will have because of the recent set-back in steel production. Strike-loss estimates run to nearly a million tons—and even before the strike, spot shortages had already been created by high demand.

In this emergency period, as always, Ryerson stocks undoubtedly can help you. Thousands of tons of certified quality steels are on hand at your nearby Ryerson plant—carbon steels, alloys, and stainless—and our stocks are being built up daily. In the few cases where the exact kind or size you need is not available locally we will check stocks at our 15 other plants for you.

Remember too that when you order from Ryerson you not only have the world's largest reservoir of steel stocks to draw on, but also the advantage of our long experience, unequalled facilities, and complete dedication to quality of product and service.

So for help on emergency or regular requirements—call your nearby Ryerson plant today.

PRINCIPAL PRODUCTS IN STOCK

BARS, CARBON STEEL—Hot rolled and cold finished—rounds, squares, hexagons, etc.

STRUCTURALS—Channels, angles, beams, etc.

PLATES—Welding and forming quality, abrasion resisting, E-Z-Cut, flange quality, safety plate, etc.

SHEETS & STRIP—Hot and cold rolled, many types and sizes, cut to exact sizes.

TUBING—Seamless and welded mechanical and boiler tubes, hydraulic tubing, etc.

ALLOY STEEL—All types including leaded alloys.

STAINLESS—Allegheny metal bars, plates, sheets, pipe, tubing, fittings, etc.

BUILDING PRODUCTS—Reinforcing bars, spirals, bar joists, wire mesh, etc.

MACHINERY & TOOLS—For metal fabrication.

RYERSON CERTIFIED STEELS

RYERSON STEEL

JOSEPH T. RYERSON & SON, INC.

LOS ANGELES—Plant: 4310 E. Bandini Blvd. Mail: Box 3817, Los Angeles 54. Phones: ANgelus 2-6141, from San Diego, (no toll) ZEnith 6660.
SAN FRANCISCO—Plant: 65th & Hollis Sts., Emeryville. Mail: Box 188, Emeryville, California.
Phones: OLympic 3-2933, DOuglas 2-4211 (S. F. Zone only)
SEATTLE—Plant: 1200 - 4th Ave. Mail: Box 3268, Seattle 14. Phone: SEneca 2300.
SPOKANE—Plant: North 207 Freya St. Mail: Box 2158, Spokane 10. Phone: KEystone 9311.

For more details circle No. 33 on Reader Service Postcard

Western Industry

AUGUST 1955

7th annual **MATERIALS HANDLING & PACKAGING** issue



HOIST lowers engine mount held by "ice tongs" down to chassis line.

Materials handling saves money . . .

where?
when?
how?
why?

Each article in this issue is designed to answer for you one or more of these questions, by illustration, example, or fact, as found under Western operating conditions.

How the new Ford plant does it

Flexibility, short travel, simplified movement, accessibility

THE year's biggest materials handling installation in the West is the new Ford Motor Co. assembly plant near San Jose.

There 1,800 tons of parts and components, comprising over 7,600 different items, are daily received, unloaded, and distributed to the proper plant areas and then assembled in the form of passenger cars and trucks. In addition, 1,100 production repair parts and 6,500 non-production items are handled, for a total of 15,000 different items in inventory in the plant. It should be noted that 16% of production items required, and 90% of non-production items, are purchased on the West Coast.

Capacity of this plant is 700 cars and 180 trucks in two shifts. While following the general pattern of automobile assembly plants, it embodies many advanced engineering ideas and will serve as a model for two other Ford assembly plants in the country.

It did not just grow like Topsy, nor was it an ivory tower package deal fresh off the drawing boards. On the contrary, it was the outcome of long studies of practices in all other Ford assembly plants, plus the prospective needs of the San Jose operation. Working out the details involved al-



OPERATOR uses crane to lower load of ten frames which have just been swung out of the box car (at right, not visible in picture) down to the unloading platform to be picked up in a few minutes and towed away to the storage area.

most continuous commuting for a year between the former plant at Richmond, which had been in operation since the early thirties, the site of the new plant, and Dearborn, for at least one of the California Ford executives.

Main problems

Many of the problems worked out are common to industrial plants of all kinds, although on a vastly larger scale. Among these were:

Maximum capacity at lowest building cost

Flexibility

Short travel, simplification of movement, and accessibility

Most suitable types of equipment

Clear aisles

Shape and size of the plant had to be the first consideration. Different ideas of layout visioned square, long and narrow, T-shaped and L-shaped buildings, but a rectangular oblong was the best answer to the needs.

To determine the size, adding the stock storage space to the assembly and office space necessitated a building 1,710 x 890 ft. Then rail and truck unloading dock requirements of 180,900 sq. ft. were added, making a total plant area of 1,377,900 sq. ft. on a 37-acre site. The plant area is divided up as follows, in square feet:

Item	Area	% of total
Rail and truck unloading	180,900	13.1
Aisles	258,860	18.8
Dock storage	235,641	17.1
Production & process area	652,882	47.4
Offices, cafeterias, etc.	49,621	3.6

The principal assembly lines are at right angles to the two railroad receiving tracks and truck unloading area, which run along the back of the building.

Key to each of the planning steps is the material handling engineering process card, one for each of the 7,600-odd end items received at the plant. This was used to compute floor space, container requirements, unit loads, size of aisles, etc.

Fifty different types of carloads, containing body sides, frames, engines, axles, glass and trim sets had to be allowed for. Frequency of their arrival and the location of the departments to which they are destined, determines the relative position of the cars on the track at the unloading dock. Cars unloading the fastest are positioned nearest the ends of the building, and are switched in and out at intervals of one or two hours.

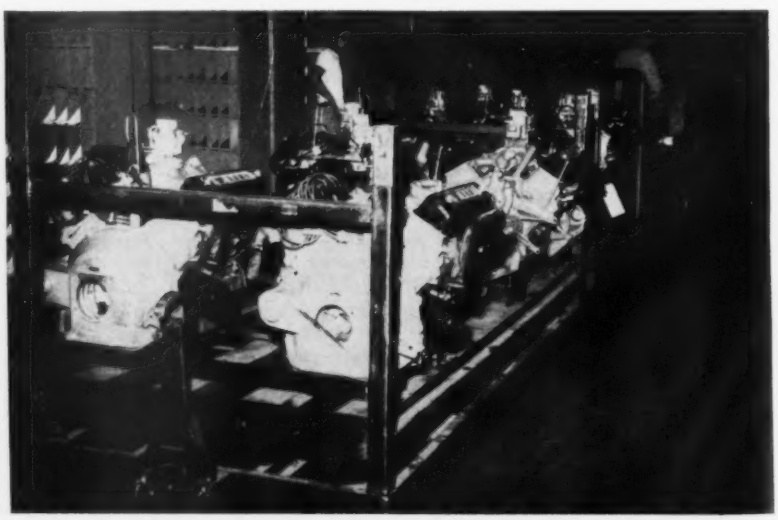
The "float" is 2½ days supply, or 132 cars, 66 in the yard and 66 on the unloading tracks. Add to this the LCL shipments and 60 to 70 loads daily of incoming truck receipts.

To plan the rail receiving system, the volume through a 10-day cycle was charted, using a standard car unloading time and based on a 4-hour switch. This revealed the number of unloading spots required and fixed the length of the dock.

By using the process card again to analyze the movement to each department, the areas of heavily concentrated stock movement on the dock were found. Properly distributing these heavy unloading points along the dock permitted straight line of flow to the storage and use points, and eliminated aisle bottle-necks and continued cross travel on the unloading dock.

This study also determined the required number of cranes and their location. These are two 5-ton traveling bay cranes, one at each end of the building for unloading frames, and two 5-ton bridge cranes to transfer material from railroad owned racks to plant handling racks.

The two depressed rail tracks are 1,710 ft. long and the dock is 30 ft. wide, providing 15 ft. of working space for unloading and a 15-ft. traffic aisle.

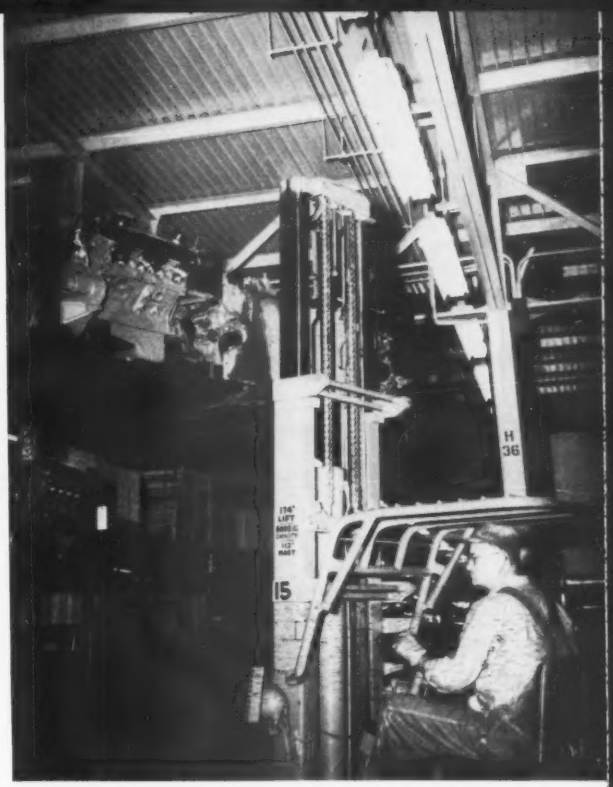


VERSATILITY and flexibility of tier racks (shown here under tow) and their companion bin racks, which can be used both for transportation and storage, provides the answer to the Ford problem of fluctuating floats and frequent layout changes.

Sixty-six rail cars can be spotted at one time, and there are three hydraulic bridges so the back track can be easily reached. These bridges remain down at track level as long as the locomotive is in the plant, and return to floor level after it is outside. The truck dock is located closest to the passenger car end of the plant in order to provide minimum tonnage delivery distance. There are 14 truck unloading aprons, each with hydraulic leveling devices to accommodate varying truck heights.

Outgoing shipments of cars and trucks total 45 carloads daily, plus the truck-aways.

From the dock the material moves to storage space which is calculated to accommodate the maximum float of every item in the plant at the same time. Actually, this much space is not required at the present time, but it provides a reserve area available for 25% future expansion in total volume of end items.



NO air rights wasted! Engines stacked four tier racks high. All lift trucks in plant are powered by propane, have special tanks mounted on rear requiring only one change daily, made in a moment by aircraft type quick change couplings.

Key to movement

The key to movement from receiving dock to storage and line feed areas is the tug and trailer train, carrying racks into which every one of the 7,600-odd end use items can be loaded and stored. Fluctuating floats and frequency of layout changes place an economic value on using fixed storage conveyors. The versatility and flexibility of the tier and bin racks is the answer.

Conveyors and hoists, the equipment most popularly associated with automobile assembly, are used for fixed course and highly repetitive work in the assembly steps.

Lift trucks are classed as portable elevators, with movement limited to 300 ft. "Lift truck area-ization" is practiced. This means dividing the plant into controllable segments, each one having a work load potential requiring the service of one lift truck.

Here again the engineering process card comes into play. By taking the average standard time for each unit load moved by fork truck, the total fork truck hours are compiled. The number of lift trucks required is calculated by applying standard time to unloading, storage, and line feeding of material by fork truck.

The use of liquid petroleum gas in all fork trucks has reduced operating and maintenance cost 25%. LP-gas is safer to use inside the building and is stored more easily than gasoline.

Ford has pioneered the use of tier racks for movement and storage of parts. These have removable wire mesh sides and ends, with the 4 x 9-ft. size in major use. For material coming from local vendors by highway truck a 4-ft. x 80-in. size is employed. For rear axles there is a 39 x 60-in. special. Bin boxes 48 x 53 in. serve for dense items. The 4 x 9-ft. tier racks can be moved right into the box car and handle either 4 x 4-ft. square pallets or unpalleted items. The engineering process card enables the company to determine how many racks are required for passenger body construction, how many for unit loads, and how many for hand handled items.

Tier and bin racks are mounted on 48 x 108-ft. and 39 x 60-ft. dollies and 36 x 72-ft. general purpose trailers.

Two-fold purpose

Solid deck bin rack trailers serve a two-fold purpose: (1) providing a trailer capable of handling a bin rack with a capacity load; (2) making an excellent carrier for 48 x 48-in. expendable pallets that have a tendency to break apart when carried on 36 x 72-ft. general purpose trailers.

Another new feature is a permanently attached common coupler on all trailers, which permits the train to be made up of any combination of trailers. It has a self-locking feature and can remain in an upright position when not in use.

Versatility of the walking type grip couplers is increased by modifying the design to permit the operator to ride the vehicle. In body side handling where there is almost continual movement of racks through a distance of 50 to 150 ft., this increases efficiency.

Aisles have been designed so that loads can be set down without stopping the flow of traffic. Main aisles are 15 ft. wide, secondary aisles 12 ft. "No offices in the aisles" is a plant rule.

Bays are 45 ft. wide and 50 ft. long to support the ceiling trusses. Automatically controlled doors speed up the movement of mobile equipment. Conveyors flush with the floor permit mobile units to drive right over them.

The major factors affecting stock storage space are:

1. Production schedules
2. Received quantities
3. Shipping containers
4. Material floats
5. Ceiling height

Stock storage space is in two categories: reserve and line feed. The latter is material accessible for direct procurement by the production operations, and 10 ft. depth is the most practical. The line feed area keeps a minimum of 8 hours of stock of hand handled material and 4 hours of unit loads.

This is impractical for engines, so a special line feed back-up area was created directly across the aisle from the line feed area. This permits fast movement of racks on wheels to the line and considerably shortens the dress-up system.

Reserve stock is material that must be moved within access of the production by non-production personnel. The size of the reserve area is controlled by selectivity.

SAN JOSE MATERIALS HANDLING PLANNING TEAM

Here are the men responsible for the materials handling development and final execution from the San Jose end, under the direction of W. A. Abbott, Jr., plant manager. They were all on the staff at the Ford plant at Richmond which had been in use from the thirties up to the time operations were transferred to San Jose.

J. A. Richardson	Production manager
B. H. Feldman	Manager, manufacturing engineering
J. Lynch	Manager, production control
J. Van Amringe	Technical assistant
T. W. Maxwell	Materials handling engineer
W. L. Morrison	Materials handling engineer

PARTIAL LIST OF MATERIALS HANDLING EQUIPMENT

Lift trucks: **Clark Equipment Co.**
Tow tractors: **Mercury Manufacturing Co.**
Loading dock ramps: **R. L. Faubion Co.**
Railroad lift bridges: **R. V. Harty Co.**
Tier racks: **Equipment Manufacturing, Inc.**
Monorails: **Louden Machinery Co. and American MonoRail Co.**
Cranes: **Whiting Corp.**
Elevators: **Atlas Elevator Co.**
Spray booth and ovens: **Newcomb-Detroit, Inc.**

Work benches and tables at subassembly stations have been standardized in a pre-fabricated work station with standard basic components of a 28½ x 14½ stand with three tote boxes of varying sizes.

Assembly operations are in general familiar to everyone who has visited automobile plants, with some modifications.

Paint system

As the result of piping 14 colors of paint from paint storage in the oil house outside the plant to the spray booth, painting is nearly completely automatic. Pick-up manual operations complete the painting job. The operators merely pick up the desired hose and connect it to the spray gun and the vehicle is painted as it moves through the booth. The operator has to clean out the gun between arrival of vehicles, unless the color happens to be repeated, in which case no change is necessary.

This automatic spray is limited to outside surface; for interior work the gun has to be directed by an operator.

Another new feature is the resistance welder for welding dash panel to front floor panel to rear panel. When the operator turns the switch, the welding fixture adjusts itself and fabricates the selected floor panel automatically. It can produce 120 assemblies an hour and each welding press has an automatic ejector which "kicks" each panel assembly out of the machine after it is completely welded.

Overhead suspension, a relatively new feature in engine dress-up, is used. The engines hanging from a monorail in a carrier mounted on trunnions which permit the motor to be turned around and worked on from any side.

From this line the engines move to final assembly. Here are two overhead cranes running on a Louden monorail which pick up the body with padded hooks and lower it on the chassis at the rate of 2 minutes for each crane. As the front end assembly passes over the aisle, a warning signal automatically sounds so that people know when to stay away from the spot underneath it.

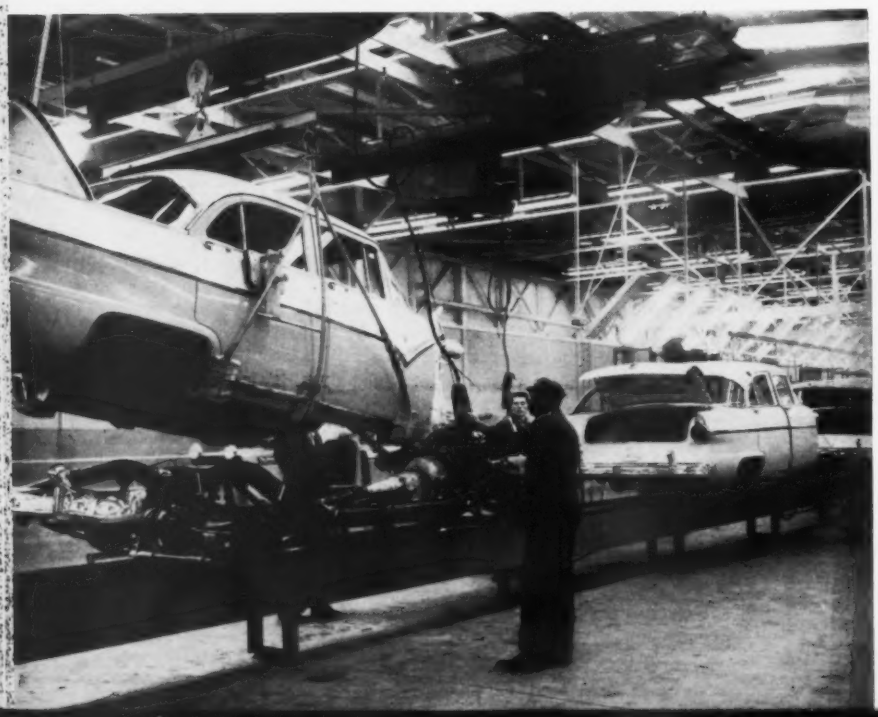
Industry innovation

An innovation in the industry is the utilization of semi-automatic mounting and inflating of tires. Rims are painted and then delivered via conveyor to a ram press type fixture. Tires on gravity rolls are fed to the fixture also. Tires are positioned to the wheel manually, and the mounting equipment completes the mounting job. The inflation mechanism then inflates the tire through the bead. The completed tire and wheel assembly is then transported automatically by overhead conveyor to the final chassis line.

Various monorails and conveyors are utilized in the assembly operations. Chassis are assembled upside down and in reverse when they reach final assembly.

Production is now about 62 vehicles an hour. The speed of the final assembly conveyor averages 48 cars and 14 trucks an hour.

As trucks are more specialized and the big trucks are practically custom built, cubic storage cannot be used as much. Selectivity of axles, hubs, drums, brakes, and frames must be maintained so the storage cannot be as high or as dense.



BODIES move to final assembly by overhead cranes, traveling on a monorail, which pick up the body with padded hooks and automatically return to their starting point as soon as the body is released from the hook by the assembly line operators.



1

BATHTUB weighing 98 lb. is placed upon bottom section of a one-piece, four-section, wrap-around blank.

Materials handling saves money . . .

Wrap up a bathtub for you?

Wirebound crates do it fast, give protection at low cost

SPEEDY packaging, impressively low shipping costs, and the elimination of heavy or complicated special interior packing and bracing are accomplished by U. S. Porcelain Enamel Co., of Los Angeles, in packing enameled steel bathtubs for automobile trailers.

Wirebound crates do the job for these 98-lb. bathtubs which require thorough protection in transit. Here is the process, as reported by R. G. Lundeen of the company:

A one-piece wirebound blank that comprises the four sides of the crate is laid on the floor or atop a previously packed tub. The tub being packed is placed on one section of the blank after protective cushioning pads have been stapled to the cleats of the blank at strategic points.

One side of each of the wirebound ends of the crate then is attached to one section of the blank, and the latter is "wrapped around" the tub so that only the front side still is open.

Cartoned accessories and fittings are placed in front of the tub, and a piece of pre-cut wooden blocking is slipped between the end of the crate and the end of the tub. The crate then is closed simply by folding shut the open side, securing the other sides of the wirebound ends to it, and engaging and closing the wire-loop fasteners.

In all, only four man-minutes are needed to pack a tub, including stapling the cushioning pads. Crates are packed one atop another to three high from the floor, then taken to the shipping room.



2

WIREBOUND ends of crate are slipped through pre-cut slots and folded, attaching them to the wrap-around blank.



3

CARTONED accessories and pre-cut wood blocking are placed in the crate before attaching the last side of the blank.

Materials handling saves money . . .

Big-time refuse disposal job

Tremendous monthly tonnage moved with minimum amount of rolling stock at McClellan Air Force Base at Sacramento



WASTE CONTAINERS are picked up at convenient points by trucks fitted with hoisting units. Here is method of connecting truck chain to container lug. Note counter balance on hook.



CONTAINERS AND TANK for liquid waste drained off at central pick up station awaiting arrival of truck. Containers are marked with signs indicating each type of metal or refuse.

REFUSE disposal, even when it involves only the kitchen garbage pail and a couple of wastepaper baskets, calls for some effort. When it gets up to 130,000 cu. yd. a month, which is equivalent to 60,000 tons a year, then you really are in for a job.

This volume of industrial waste alone is what McClellan Air Force Base, just outside of Sacramento, Calif., has to handle. It includes paper, fiber in various forms, lumber, plywood, sawdust, metals, oils, greases, and solvents. Efficient salvage is an essential part of the operation, because the recovery amounts to several thousand dollars a month.

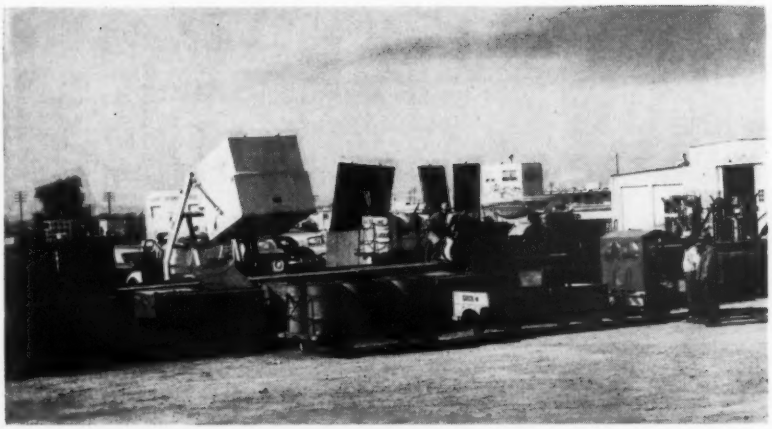
As the Base covers a tremendous acreage, with buildings scattered all over it, it presents a huge housekeeping problem, but an effective system keeps the waste cleaned up all the time, eliminating interference with operations and reducing fire hazards.

Essentially, the method consists of:

1. As much segregation at the source as possible.
2. Salvage arrangements.
3. Transportation equipment that carries the waste to the disposal point.
4. Prompt disposal by burning or placing in a sanitary fill.

Equipment used

It involves the use of the Dempster-Dumpster system, which makes it possible to transport big volume with a minimum amount of rolling stock. This equipment consists of 11 trucks equipped with hoisting units to pick up and discharge the containers in which the waste is deposited. In addition, there are flatbed trucks for carrying bulky material too big to go into the Dempster. There are 300 containers in all, 200 of them of 10-yd.



MATERIALS being received at central segregation area. Dumping unit is shown in operation. Small trailer train for carrying the sorted metals off after segregation is in foreground.

size, the remainder 4-, 6-, and 8-yd. capacity. Each shop, department, or other originating source brings its waste to a steel container placed outside the building for easy access by the truck. Segregation at the source is economical in most cases and reduces the number of containers required. The bulky waste is deposited on ramps at authorized refuse points for pick up.

Hand labor eliminated

At the various collection points the trucks pick up the containers, the hoisting unit making it unnecessary to use any hand labor in the operation, and the containers are then transported to the burning area. There the truck backs up to the edge of a big pit, where the bottom of the container drops and the waste slides into the pit.

The average haul by the trucks is six miles round trip.

Material from the industrial shops is handled by a central segregation crew, in order to get more efficient separation of metals and maximum salvage.

Some of the liquid wastes drain off from the point of origin into 1,000-gal. tanks which are hauled away on Dempster trucks. Other wastes go into drums, to be picked up singly or in multiple, according to the volume generated.

A burner is being installed adjacent to the burning pit, for use when high winds create a fire hazard.

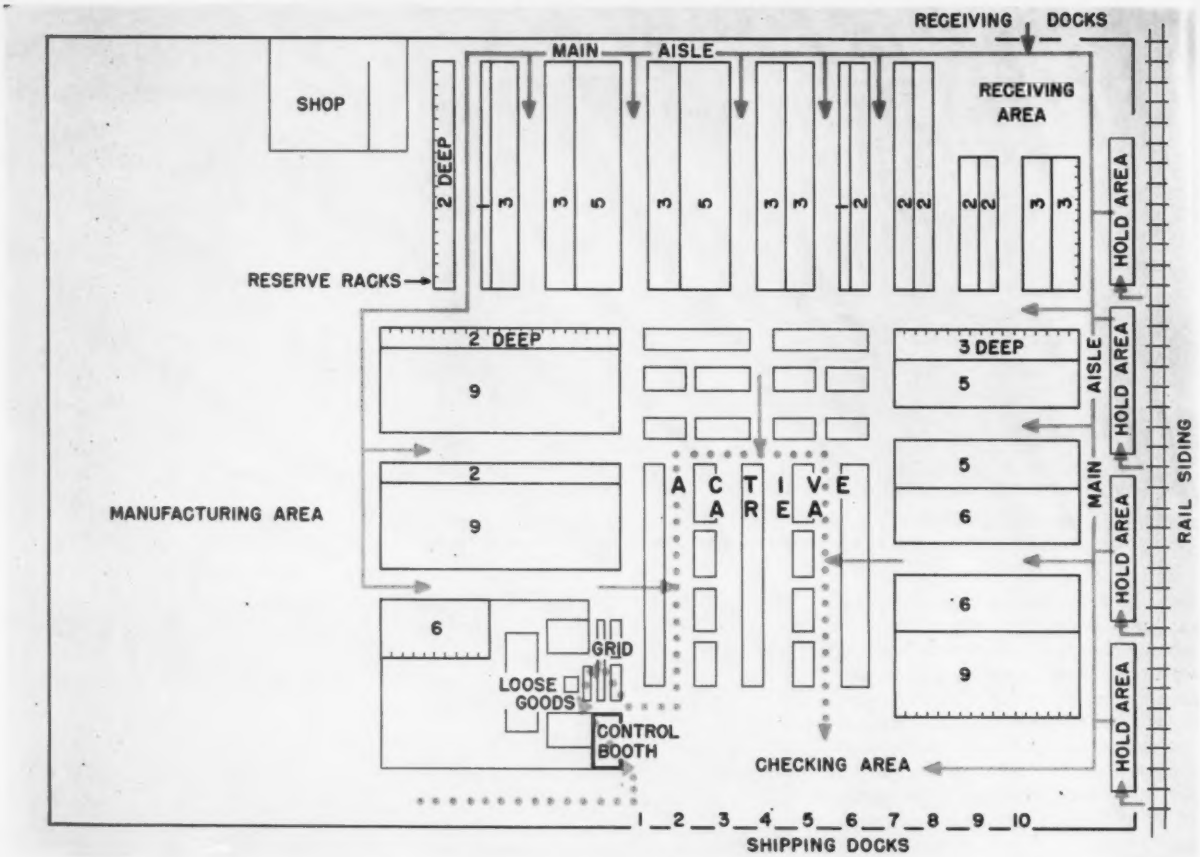
The disposal system has been in use since 1943 and has been enlarged with the growth of the Base. Its use has made possible large savings in labor, since the operation is mechanized to the greatest possible degree.



ANOTHER VIEW of central segregation area, where material from industrial shops is handled by a special crew in order to get more efficient separation of metals and maximum salvage.



END OF THE LINE for all waste that can be burned. Truck is emptying 10-yd. bucket into an open burning pit. When high winds create fire hazard, a nearby burner is utilized.



ARROWS indicate the flow of palletized products entering Johnson & Johnson's West Coast warehouse facilities. Dotted line indicates movement of order fillers.

Materials handling saves money . . .

Surgical dressings on the move

Planned inventory, controlled stock movement, and reduced travel for order filling mean better warehousing



By
L. J. KRAL
Plant Engineer
Johnson & Johnson
Menlo Park, Calif.

MANY advanced principles of warehousing were used as the basis for design of the shipping department in Johnson & Johnson's new plant in Menlo Park, Calif. This member of Johnson & Johnson's worldwide family distributes over 550 items of surgical dressings and related products to the seven Western states, Alaska, and Hawaii.

The plant, located on a 20-acre plot, contains over 140,000 sq. ft. of floor space, 90,000 sq. ft. of which is used for the warehousing and shipping function. The balance of the space has been provided for manufacturing operations.

All items of finished goods are palletized in trucks or rail cars when received, in accordance with assigned pallet patterns and case quantities per pallet. Double faced, single entry, 42 x 42-in. pallets are used.

The material is then transported, by battery-powered pallet transporters, from the truck or rail car to "hold" areas located adjacent to the truck receiving docks and rail siding. Radio dispatched fork lift trucks move pallet quantities from the hold zones to the reserve area as directed by the stock controller.

Reserve storage

This area consists of various depths of storage space ranging from one pallet deep to nine pallets deep. Racks are also used, as required, to enhance cube utilization.

Development of the reserve area layout basically involved a four-step procedure. First, a formula was developed which, when extended, predicted the depth key that should be

used to provide for the most economical utilization of floor space.

The variables in the formula were two: the number of pallets of an item to be stored and the tiering height (in terms of number of pallets) that was possible for the item. With 17 ft. 3 in. clearance beneath beams, three-high tiering is possible for all of the items handled, but in some instances two-high tiering is required to prevent crushing of cases.

Second, the planned inventory, including a reasonable growth factor by item, was determined and converted to pallet quantities.

Third, by substitution in the formula, the depth of key and the number of keys were determined for each item.

Fourth, through summation by depth classification, the total number of keys for each depth classification was determined.

Following this statistical development, the final arrangement and shape of the reserve area was tailored to suit the balance of the operation.

Stock control

A stock controller, located in the control booth, regulates the entire movement of stock into and from the reserve area. The flow of stock from the reserve area, as indicated by solid arrows in the accompanying drawing, is either to the active area for replenishment purposes or to the checking area to provide full pallet quantities for order filling.

The tools which facilitate the control of movement and storage of stock include:

1. A Productrol board on which is recorded, at all times, the number, depth classification, and location of empty keys in the reserve area;
2. A product card file arranged in four digit product code numerical sequence, in which is recorded the location of each item of stock in the reserve and active area;
3. A base station radio for controlling fork truck movement;
4. A two-way Teletalk system for communication with personnel in the active area and checking area.

An advantage built into the reserve area layout and the method of recording stock storage locations is that rotation of stock, a matter of the highest importance, is automatic.

Active area

This area provides the supply source for all full case assembling, except full pallet quantities. Each item of stock is represented in this area in various quantities ranging from a maximum of three full pallets for heavy volume items to a minimum of several cases for the slowest moving stock. Assignment of an item to a particular location, therefore, is a function of the sales turn.

The main aisle of the area forms a U-shape, approximately 230 ft. total length, and the fastest moving items of stock are assigned to locations on either side of this aisle. Within the "U" is placed slower moving items, and appropriate access aisles are provided. Items that represent approximately 85% of the annual volume are located on the main aisle, so that the frequency of movement from this aisle is held to a planned minimum.

All locations in the active area are identified by a fixed three-digit number. The area is laid out so that the numbers increase numerically around the "U" and, since shipping orders are written with the items arranged in numerical sequence, several orders are filled at the same time without back tracking.

Order preparation

All papers relating to a customer's order originate in the IBM order service section. These papers include the two-part shipping order which provides the shipping department with all pertinent data required to fill the order.

Among other factors, the shipping order identifies each item by product description, product code number, quantities required, and the active area location number, with the items arranged in numerical sequence by location. A packing slip and pallet move slip are a part of the shipping order. Bills of lading and stencils are also provided.

When the papers have been prepared, edited, and checked, they are sent by pneumatic tube to the control booth in the shipping department.

Order assembly

Upon receipt of orders in the control booth, the orders are sorted.



WEST COAST Johnson & Johnson plant in Menlo Park, Calif., contains over 140,000 sq. ft. of floor space, 90,000 of which is devoted to warehousing and order filling facilities.



OPERATORS fill several orders at one time from the active area. After loose goods are picked up, a maximum travel of 230 ft. is required to fill the remainder of the order.

Those orders with loose goods are combined to form assignments for the loose goods section. Those orders without loose goods are sorted by carrier number and are used to make up assignments for the full case assemblers. After the loose goods section completes an order, the papers are returned to the control booth for placement in their respective carrier bins for assignment to the full case assemblers.

Full case assignments are prepared by carrier based upon the cubic content of all active area cases involved in the orders. Basically, one large order and two small orders totaling 80 cube form an assignment. The specification of cube is a function of the load carrying characteristics of the riding-type, battery-powered, pallet transporters used for assembling full case stock. This equipment was selected to suit the type and size of active area used.

Loose goods cases are picked first. Then, the active area is entered and stock is picked by location number. Since, as was previously mentioned, locations increase numerically around the "U" of the area, the total route of travel is automatically established. Completed assignments are transported to assigned zones in the checking area.

If a pallet movement is called for on an order, the pallet move slip, containing the key location inserted by the stock controller, is issued to a fork lift operator. The pallet quantity is transported from the reserve area directly to an assigned zone in the checking area. Since the first part of the shipping paper is flagged, to indicate a pallet move, the marriage of the full pallet merchandise with the balance of the order is facilitated.

Each order is completely checked to insure accuracy of item and case count; each case is stenciled with consignee data and the order is ready for loading.

Upon loading, the cases are again counted and checked against the bills of lading. Battery-powered pallet transporters are used to facilitate the loading operation. In addition, compensating, hydraulic dock boards have been installed at all truck docks to insure safety and ease of handling.

Materials handling saves money . . .

IBM aids warehouse handling

Items stored in catalog pattern provide speedy selection

By WM. P. JUNGE
Chief of Supply
The Zia Co.
Los Alamos, N. M.

WELL planned materials flow, handling, and a materials handling IBM record system have resulted in an annual saving of $20,000 for the Zia Co.'s supply division in Los Alamos, N. Mex.

For several years the Zia Co. operated its supply division in a facility consisting of 31 small buildings. Except in outside areas, it was impossible to employ modern materials handling techniques. In planning construction of a new building, particular attention was given to the flow of materials.

The receiving department was placed in one end of the new plant and the shipping department in the other. This permitted a flow of materials received to the active issue area, bulk storage area, and finally the shipping dock.

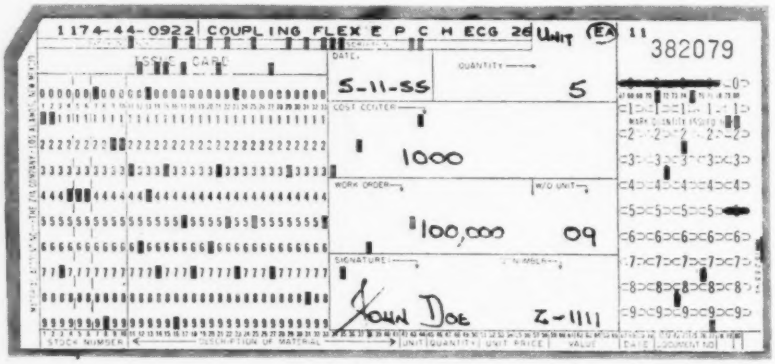
The warehouse was laid out to accommodate four major categories of materials: (1) electrical, (2) mechanical, (3) structural, (4) stationary, janitorial, and furniture. Heavy items were stored near shipping department.

Next, storage in bin and bulk area was laid out to follow, as closely as possible, the company's various catalogs. Through this arrangement, a locator system which permits speedy and accurate selection of all orders was established in the catalogs.

IBM issue cards, which are preprinted and punched, carry such pertinent information as a 10-digit stock number, a brief nomenclature, and the unit of issue. These are located with the material. Other blank spaces on the IBM cards include the work order number to which the material is charged, the number of units issued, and the signature of the person drawing the material. The spaces are filled out at the time an issue is made.

At the extreme right of the card, the mark sensing section is completed with a special graphite pencil, enabling the IBM machine to pick up the correct quantities. The writing of the numeral for the quantity issued is a means of doublecheck.

A weekly summary of issues submitted by IBM has reduced postings to stock control cards 45%. This recap of all issue cards carries, in addition to quantities of issue, the dollar value of the issues.



PREPRINTED AND PUNCHED IBM cards speed up the issue of materials to fill work orders.



THIS 255-ton gantry with outrigger (left), used by the Los Angeles Department of Water and Power Valley steam plant, is among world's largest. Special crane (below) automatically lifts sugar cane from hauler, rolls it into a bin, and returns net to carrier bed.



Materials handling saves money . . .

Cranes are often the answer

By W. H. SMITH
Vice President
Moffett Engineering Co.
Albany, Calif.

MATERIALS handling can put a real bite on production costs. Studies in factories show that materials handling runs 10 to 40% of direct labor costs; in warehousing, it will be nearly 100%. Obvious way to reduce these costs is more mechanization of materials handling.

Overhead cranes, naturally, aren't the only way to mechanize materials handling. Some places they don't fit at all; in other places a combination of overhead crane and floor level carriers is required; but where it's a case of choosing between overhead or floor carrying methods, cranes present some important advantages—and, properly planned, have a high degree of flexibility. For example, cranes—

1. Utilize air space that's otherwise idle.
2. Require little or no free aisle space.
3. Easily handle heavy, awkward loads.
4. Have a high safety factor.
5. Lend themselves to a wide variety of loads and methods of control.

Let's quickly examine these points.

Rent-free air space

Overhead cranes obviously lift and move their loads through air space, above machinery and stacked materials. In warehouses, or outdoor storage yards, they are capable of stacking materials higher than is possible with floor traveling carriers or most other handling systems. In short, with overhead cranes you use space that's rent free.

Furthermore, cab-operated overhead cranes require no aisle space; even with floor-operated overhead cranes you need only walking room for the operator. Thus, because they are not used as materials handling channels, aisles can be narrower, permitting you to put more machinery in a given area—so you increase factory productivity without increasing floor space and at the same time improve plant housekeeping.

For example, Fibreboard Products uses a motor-operated grapple suspended from a heavy-duty industrial crane for handling large paper rolls in its storage plant. No aisle space nor hooking-on assistance is required.

Safe handling

Paper rolls, long shafts, large steel plates, heavy machines, scrap iron, and other awkward loads of odd dimensions frequently just can't be moved about safely on a factory floor, but are easy meat for overhead cranes. For example, Kaiser Steel easily handles wide, long sheets by spacing magnets ten feet apart from an overhead crane.

This overhead handling method is safer, too. The cab operator has a full

view of all machinery and workers, on the floor. He can lift his load straight up out of a tight spot and carry it at a height where he doesn't have to worry about barging into tools, workmen, or other carriers. He is in a better position, too, to spot loads accurately. Even the operator of a floor-controlled crane has greater visibility than operators of most on-the-floor carriers—he doesn't have to peer around his load; it's above him. Finally, most cranes are built to handle loads much in excess of their rated capacity. All these things make for a high degree of safety.

Load handling flexibilty

Today all sorts of load-handling devices are available: hooks and multiple hooks, tongs and grapples for handling paper rolls and logs, magnets for moving steel and scrap, slings in infinite variety, clamshell buckets for loose materials, tine forks for shavings, nets, to name but a few. In fact, it has become almost commonplace in crane design to incorporate special gear or tackle, matched to the size and contour of the material to be handled. In addition, you often can have your crane designed for automatic or semi-automatic operation, where desirable to increase production.

A good example of both automatic operation and an unusual load-handling device is a crane used by the Waialua Agricultural Co. Ltd., Hawaii. This firm hauls sugar cane from the fields in huge specially-designed carriers having a 15x28 ft. bed, 11 ft. deep, capable of transporting 65 tons per trip. Tongs were used to unload the cane from the carriers; it was then rehandled by a railroad crane. Both time and considerable juice was lost as a result of this handling system.

Special crane designed

To remedy the situation, we designed a special crane capable of handling upwards of 1,000 tons an hour. The crane rests in the carrier bed on a net, one end of which is fastened to the side of the bed, the other to a hook plate. The crane hoist has two hooks spaced 10 ft. apart and attached to a 28-ft. lifting beam, which engages the net hook plate. The crane has dual controls — automatic and manual—located at a hanging push-button station, readily accessible to the driver of the cane carrier. The automatic controls are actuated by limit switches precisely controlling and coordinating hook and trolley travel.

The cane carrier is driven into position beneath the crane. The driver steps out and pushes the button marked "automatic." The lifting beam of the crane then automatically engages the hook plate of the cane net, lifts the net to roll the cane into a conveyor bin, lays the empty net back in the carrier bed and disengages. The entire operation requires only three minutes. Result, a "sweet" saving in handling costs.

Machine shops seldom need this automatic operation, but do require safety and ability to place loads accurately. Usually the crane runway will be quite high in order to clear costly presses and machines. Flexibility is achieved by hooks, magnets, etc., and by auxiliary hoists for handling lighter loads.

Sometimes the usefulness of a single-purpose crane can be increased by minor changes in the crane or its runway. An example is the half-ton floor-operated crane installed in the Kraftile plant at Niles, Calif. It is used chiefly for lifting heavy parts of the clay grinding mill when repairs are needed. By simply extending the runway beyond the grinding mill and over a free floor space, the crane can be used also for pulling motors from lift trucks when they need overhauling.

Another way to extend crane usefulness is the outrigger, as used on the big gantry at the Valley Steam Plant of the Los Angeles Department of Water and Power. Main hoist of the gantry has a capacity of 225 tons and was designed for placement and servicing of a $2,000,000, 408,600-lb. generator. Main span is 45 ft.; the outrigger, 65 ft., so it can handle 15 ton loads beyond either end of the main crane runway.

A 10-ton crane in Kaiser Steel plant, Fontana, Calif., has magnets suspended from hooks and beam for handling steel plate. Several combinations of hooks or magnets are possible, thus increasing its flexibility for awkward loads.

Planning saves money

Whether it's a big crane or a little one, indoors or out, the time to save money on cranes is in the planning stages. Planning is a subject all by itself. Suffice it to say here, an overhead crane is a capital investment that isn't productive like a lathe or milling machine, yet structurally is a part of your building. Hence your crane should be planned in advance to fit your needs, just as your building is planned. In fact, it is better to plan the building to fit the crane you need, than it is to fit a crane into an inadequate building. The latter may force you to inefficient materials handling methods.

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HEAVY EXTRUDED SHAPE

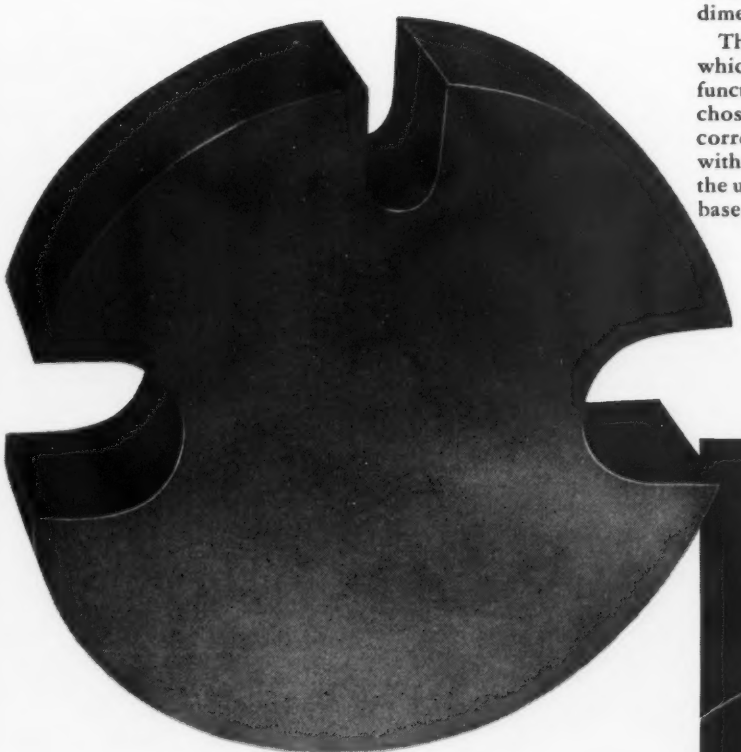
Saves Over 25¢ per lb.

FOR THE STRONG ELECTRIC CORP.

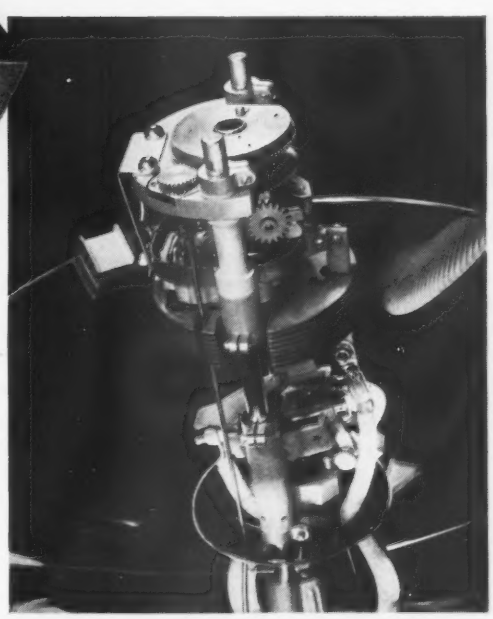
The unusual thing about this copper extruded shape is that it saves money in first cost as well as in machining time. The double economy amounts to over 25¢ per pound. The large illustration shows the shape as supplied in the form of a slug or pre-formed disc, 1 3/16" x 5". This begins as a long extrusion, from which Revere cuts the discs, and pickles them before shipping.

The customer is The Strong Electric Corp., Toledo 2, Ohio, which originally tried plate and bar, but found costs were too high. Revere Product Engineers, Methods and Production Departments collaborated with the company on the problem, and were able to develop the unusually heavy and economical shape. Strong reports a number of savings. One is that the shape is machined quickly and perfectly, with almost no rejects. This is due to the denseness and uniformity of the metal, a result of the high pressures exerted during extrusion. (Finishing operations include drilling bolt holes and cutting cooling fins.) As a secondary result of improved machining, the customer does not have to keep large inventories of metal to take care of spoilage, nor handle large quantities of scrap. Further, Revere supplies the discs in the correct thickness, eliminating a cutting-off operation for Strong. Incidentally, we are glad to supply shapes cut to dimensions, or in long lengths, as desired.

The completed part is an obturator-probe, which fulfills a control and heat dissipation function in a powerful searchlight. Copper was chosen for its ability to conduct heat and resist corrosion. Revere will be glad to collaborate with you in your search for economies through the use of extruded shapes in copper and copper-base alloys, and aluminum alloys.



Copper Extruded Shape, 1 3/16" x 5", as furnished.



Shape in place in a carbon arc searchlight mechanism.

REVERE

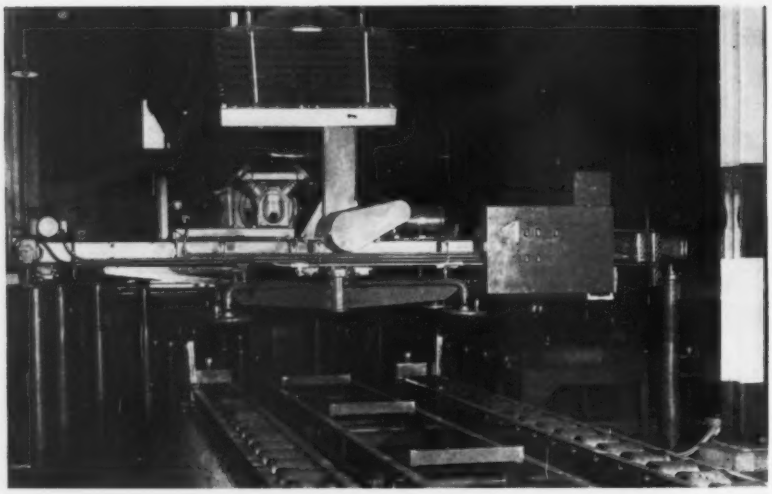
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LEFT: Hydraulic pusher conveyor moves 30-ton stacks of steel. Suction lift device removes steel, one sheet at a time.

Materials handling saves money . . .

Moving steel by stack or sheet

Three hundred tons of steel handled at one time

STEEL for the manufacture of cartridge cases arrives in strapped bundles of about 16 sheets at the Riverbank Ordnance Plant, Riverbank, Calif., which is operated by Norris-Thermador Corp. Sheet weight varies from 1,300 lb. to 1,700 lb., presenting bundle weights up to ten tons.

Weights such as these are handled by heavy duty, reciprocating beam, pusher conveyors, suction lift carriers, and overhead cranes in the steel works at this government-owned ordnance plant. Weight problems, single sheet handling problems, and change-of-direction problems have been eliminated and a smooth flowing operation installed through design of materials handling devices to meet the operation's requirements.

An outside overhead crane unloads the steel from freight cars and places it in stacks on a heavy duty, reciprocating beam, pusher type conveyor. This conveyor, designed by the Lamson Corp.'s Western division, is used throughout the plant to handle steel in stacks weighing up to 30 tons.

The hydraulically operated pusher device moves the stacks of steel on two rows of rollers located on either side of a rack of pusher bars. The pusher bars are located at 7-ft. intervals along the rack. Conveyor rolls are 6⅝ in. in diameter and are constructed of steel tubing. The conveyor will move ten stacks of steel at full load.

This beam pusher conveyor is powered by a 5 hp. hydraulic pump which moves the rack and pushers in a 7 ft. 6 in. stroke and back. The pushers contact the stacks of steel and push them along the rollers the full length of the stroke at a speed of 7 ft. per minute. On the return stroke, the pusher, which is pivoted and counterbalanced, passes under the steel stacks upon contact with them. The rate of speed on the return stroke is 14 ft. per minute.

When a stack of steel is conveyed to the end of the conveyor, it trips two limit switches. One switch operates immediately, stopping the conveyor's motion. The other limit switch operates when the last sheet of steel is removed from the conveyor, automatically starting the conveyor's motion and moving another stack into removal position.

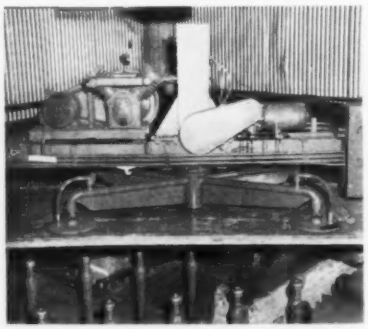
The steel is shot blasted as the first process in the plant. This requires single sheet rather than stack handling. Magnetic lift hoists, sometimes used for this type handling, were not considered adequate, due to the frequent problem of the magnets picking up more than one sheet of steel at a time.

A lift device manufactured by the Noble Manufacturing Co. and modified by Norris-Thermador Corp., which uses four suction cup lifters, was installed. The rubber cups, 16 in. in diameter, are extended from four arms on a boom. When the lift device is lowered to contact the steel sheet, a compressor withdraws air from the pocket formed by the steel and cup, creating a vacuum.

The sheet is lifted, swung over a powered roller conveyor, and lowered. A valve is opened, allowing air to enter the vacuum suction pocket, thus releasing the sheet, and the hoist is raised. A series of safety poles have been installed in the floor area over which the suction lift swings. Ballbearings in the top of these poles permit the operator to push the sheet of steel onto the powered conveyor rolls should a sheet drop.

The powered roller conveyor moves the sheets into the Wheelabrator, where they are shot blasted. While entering the chamber, the steel passes over a limit switch which controls the final lowering of the sheets onto the conveyor by the suction lift. The lift cannot be lowered onto the rolls until the preceding sheet is in the machine and off the limit switch.

Another suction lift removes the sheets from the powered roller conveyor after they emerge from the Wheelabrator and restacks it on an-



FOUR RUBBER CUPS on suction lift device contact steel sheets; air is withdrawn by a compressor; and steel is lifted.

ONE wide-range "OXWELD" W-45 BLOWPIPE handles EVERY welding and heating job

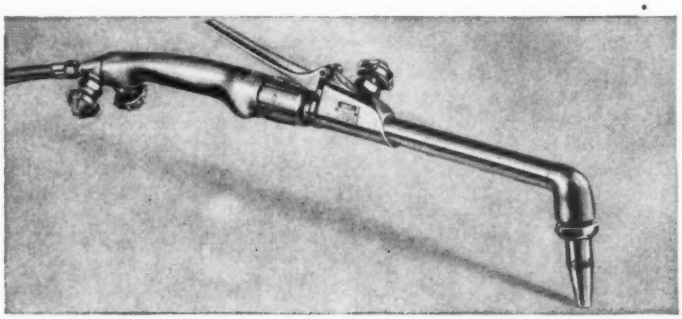
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From chrome-plated tip to offset hose connections, the W-45 shows the results of over a decade of development work by LINDE engineers. Its exclusive "jiffy-lock" heads, "form-fit" handle, and advanced styling are as modern as guided missiles and atomic power. "O" ring gas seals, flame-stabilizing mixers of improved type, and many other innovations put this blowpipe far ahead of the field in economy, ease of operation, and low-cost maintenance.

See for yourself how you can enjoy tomorrow's operating standards today with an OXWELD W-45 Blowpipe. Ask your LINDE representative for a demonstration, or write for free booklet, F-8684.



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Above is pictured the easy narrow space operation of a Revolvator Go-Getter Hi-Straddle Lift with fingertip control—fully automatic—200° turning arc—no operator training required.



Available in 1000 to 2000 pound capacity—new Revolvator Uplifter—controlled by single "deadman" lever. Flexibility of model has gained wide use throughout all industry.



Model H Red Giant Hand Lift Truck. Balanced non-kicking handle with intermediate latch insures safety. Experience tested by over 30 years



The Low Lift Go-Getter pictured above—Capacities 4,000 to 6,000 pounds—fully automatic—200° turning arc.

Fingertip Control...

NO OPERATOR TRAINING NEEDED

Designed by a pioneer of materials handling, Revolvator Company, all the lift trucks shown are unique in their built-in plus values.

FINGERTIP CONTROL. All Revolvator lift trucks are controlled by simple switches placed on the operator control bar. On the powered models one switch serves for forward or reverse movement of truck and load. The second switch serves for the raising or lowering of loads. Operators of this equipment, therefore, can initiate work savings from the moment of delivery of any piece of Revolvator Company equipment at their plants.

BUILT-IN SAFETY. All Revolvator equipment has an extra engineering additive highly appreciated by State and National Safety Councils. With Revolvator equipment loads cannot slip. Deadman controls and automatic braking protect every load—and all personnel.

PRODUCT DESIGN in Revolvator equipment is the result of experience engineered into equipment with complete understanding of shop and warehousing procedures. It is the pride of Revolvator Company that no equipment is ever sold which would be either wasteful of its capacity or abused by job over-loads.

For help in solving your materials handling problems write to Revolvator Company, 8798 Tonnele Avenue, North Bergen, N. J. UNion 3-8120.

See the GO-GETTER and the REVOLVATOR UPLIFTER at

IRA G. PERIN COMPANY
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SAN FRANCISCO 5, CALIF.
Phone: GArfield 1-1827

J. W. LAFFERTY COMPANY
11371 S. Atlantic
LYNWOOD, CALIFORNIA
Phone: NEvada 6-1828

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See Directory listing page 119, Yellow Section

other hydraulic pusher conveyor. An automatic counter trips a switch at a predetermined number of loaded sheets and activates the pusher conveyor moving the completed stack, and a new stack is begun.

An overhead crane equipped with a Mansaver carrier lifts the stacks from the end of the pusher conveyor and restacks it on another hydraulic pusher conveyor which moves the steel stacks into the annealing furnace room. This step involves a 90-deg. change of direction and requires a combination of the conveyors and the crane, due to the quantity of steel involved.

Cranes once again lift the stacks from the conveyor and place them on the furnace beds, where they are prepared for the annealing treatment. After preparation, the furnace covers, the outer of which weighs approximately 20 tons, are crane-hoisted onto the beds.

Removed from the furnace beds by crane, the stacks are then placed on another pusher type conveyor and moved to the shearing area. Here a crane lifts the stack to the shear and a suction lift places it, one sheet at a time, on a drag conveyor which feeds the shear.

The steel sheets are sheared into strips, which are chain-conveyed to blanking presses which blank discs from the steel strips.

A belt conveyor located beneath the punches catches the discs from which the cartridge case is drawn and carries them to an inspector. They are then coded and placed in tubs or on pallets which a lift truck transports to the production lines.

PACKAGE TESTER for heavy equipment

A VIBRATION MACHINE with a test load capacity of 20,000 lb. has been constructed at the Boulder, Colo., laboratories of the National Bureau of Standards, at the request of the Air Force, to study the behavior of heavy apparatus during air and rail shipment.

The vibration table can produce double amplitudes ranging from 0.020 to 0.065 in. at frequencies up to 60 cycles per second. Many large pieces of apparatus are shipped with no vibration protection at all or with inadequate built-in shock mounts. The NBS vibration testing facility makes it possible to study the behavior of a wide variety of methods used in packaging, shock-mounting, and protecting heavy shipments.



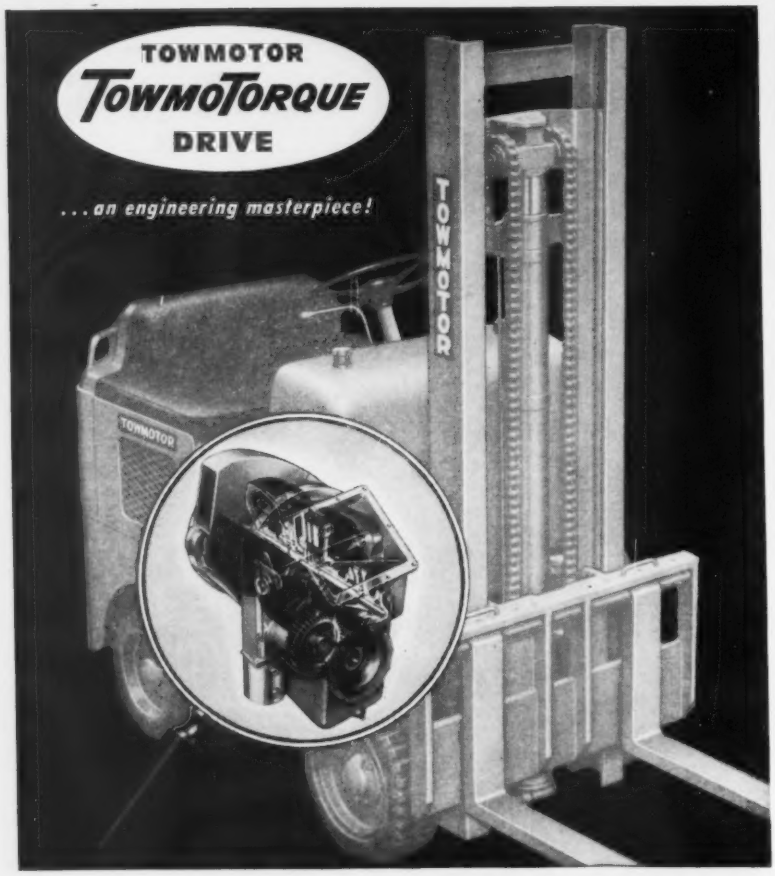
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for western industry
since 1922

That's the story of the Buck Forte Rooter shown above. The top photograph shows the rooter when it was fabricated from *forty-one* pieces of plate. The *five part* rooter below is the result of Kay-Brunner Steel engineered casting design skill and know how. Not only was the assembly operation simplified, but by taking full advantage of the flexibility of design available through steel casting, added strength was spotted where needed most. The finished product was not only stronger and more economical to manufacture, but had greater eye appeal.

Perhaps the product that *you* now *fabricate* could benefit by *casting*. Why not give us a call? Our engineers would be happy to discuss it with you without obligation.

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The drive that set a ***NEW STANDARD*** *of*

PERFORMANCE

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TowmoTorque is the only drive engineered for all fork lift truck operations. It is available in Towmotor Fork Lift Trucks exclusively. Get the facts from your nearby Towmotor Representative, or write TOWMOTOR CORPORATION, Div. 6708, 1226 E. 152nd St., Cleveland 10, Ohio.

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THE ONE-MAN-GANG
®

FORK LIFT TRUCKS and TRACTORS
SINCE 1919

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OIL HANDLING
requires safe equipment

AT Union Oil Co.'s marine terminal in Oleum, Calif., loading and unloading bulk shipments of oil is an operation that must be free of any possible cause of fire. Equipment cannot have open spark apparatus such as spark plugs on combustion engines.

Oil is loaded to barges via flow through 4- and 6-in. hose. The weight of 6-in. hose when loaded with oil is 1,800 lb., a weight which requires crane lifting of the hose end to the dock, where it is coupled with pipe system receptacles.

Stationary cranes are located on the dock which accommodates ships, but the barge dock is served by a mobile crane unit manufactured by the Austin Western Co., Aurora, Ill. The hydraulic crane's moving power is provided by a diesel engine which eliminates the spark problem.

Most diesel engines require a gas-operated combustion starter. This was impossible at the Oleum docks due to the safety requirement. A compressed air starter is used instead.

Change in tires

The Edward R. Bacon Co. of San Francisco, which adapted the crane for use at Oleum, found through operational tests that the usual oversized tractor-type tires used on the crane were a bad feature in this instance. A curbing has been built at the edge of the dock to prevent vehicles from being inadvertently driven off. However, tractor tread tires were found to be capable of very easily climbing this 11-in. curbing.

To eliminate the possibility of an operator driving off the edge of the dock, hard rubber tires were installed on the crane.

The installation of the rubber tires lowered the under clearance of the crane to 4 in., but operating on the level dock, this was found to be adequate.

One further safety device was designed for the crane. A water baffle was added to the muffler installation through which the exhaust fumes pass. This eliminated the possibility of ignition of the diesel oil fumes.

The crane, developed during the war for handling of torpedoes, has a 360-deg. swing, a 66-deg. raise and lower capacity, a boom extension capacity of 35 ft. Being mobile, it can be used at any location along the dock and has proven more economical than stationary cranes located at intervals along the dock.

For more details, adv. opposite page, circle No. 37 on Reader Service Postcard ⟶

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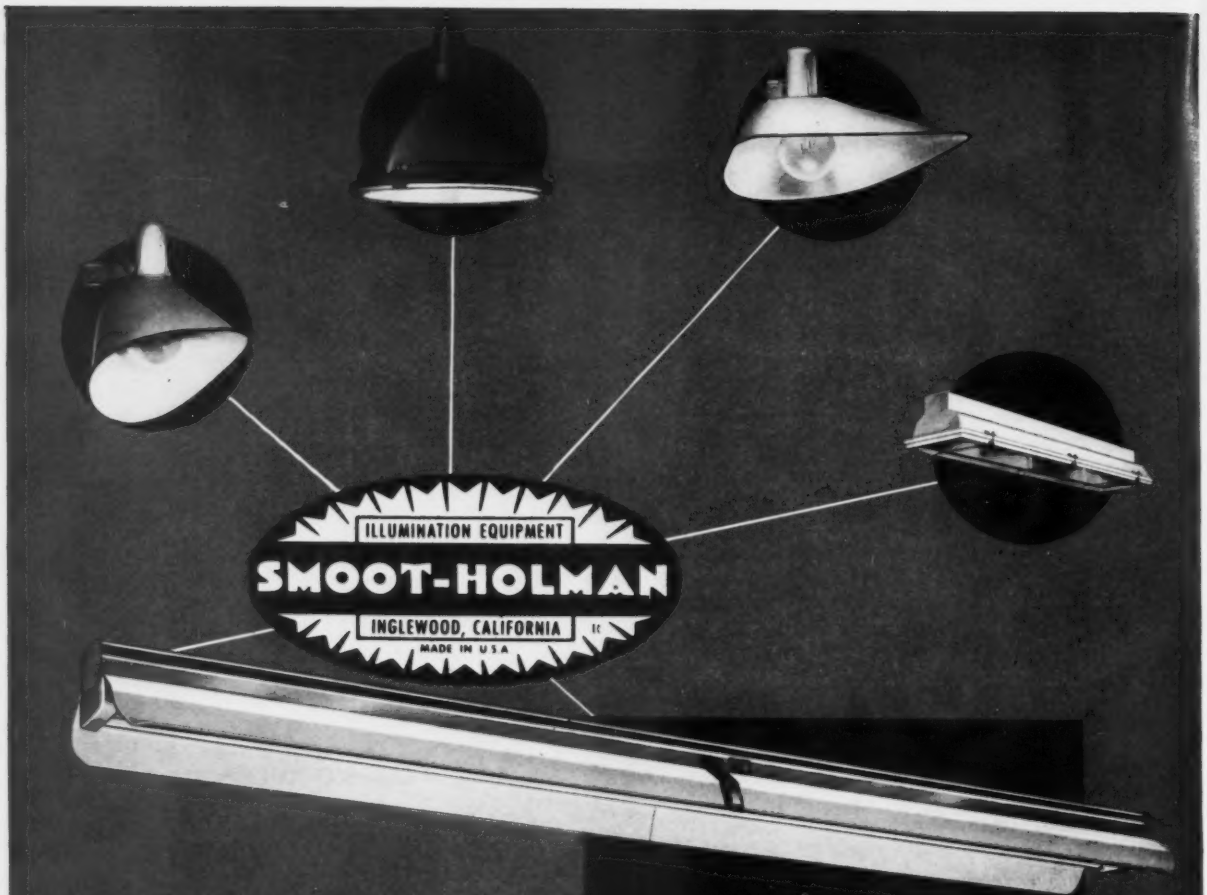
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Shock resistant, vibration proof

DURABLY FINISHED
Good as new after many years

EASY TO MAINTAIN
Lowers upkeep and service costs

QUALITY COMPONENTS
Replacement parts rarely needed

SMOOT-HOLMAN COMPANY SMOOT-HOLMAN INGLEWOOD CALIFORNIA

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LEFT: Standard model truck with rotating fork carriage and side fixture dumps bin box load of dried fruit into hopper 64 cu. ft. at a time.

BELOW: Electric fork lift truck stacks loaded bin boxes to the rafters with ease. (Photos courtesy of Rosenberg Brothers and Co., Mercury Manufacturing Co., MHI member.)



Materials handling saves money . . .

Costs slashed on a 6:1 ratio

By L. WEST SHEA
Secretary
The Material Handling Institute
for the Industrial Electric Truck
Product Section

WHEN faced with rising packing costs, Rosenberg Brothers and Co. (division of Consolidated Foods Corp., Chicago), the big kings of the dried fruit industry in California, turned to mechanized materials handling for one of the answers to their problem. The result was a slash in handling costs alone on a 6 to 1 ratio.

While the demand for their products does not fluctuate too greatly, receipts of dried fruit from the growers do have peaks and valleys. Formerly, dried fruit was received in fabric bags and manually handled, one bag load at a time, from the growers, onto and off over-the-highway trucks and into large storage bins.

From the storage bins the dried fruit was hand shoveled into wheelbarrows for transporting to the hoppers which feed the processing operations. Extended storage periods caused caking and a hand pick was needed to break the mass before the fruit could be removed.

Looking beyond the savings in storage space, improved housekeeping, and incoming handling, extra benefits were seen in mechanized materials handling. Real savings are being made in the mechanized transport of dried fruit to the processing hoppers and mechanically loading them.

Equipment selection included 6,000-lb. capacity electric fork lift trucks with a rotating fork carriage and 48 in. deep x 48 in. long x 48 in. wide x 4 in. underclearance portable bin boxes.

How it's done

The empty bin boxes are shipped to the growers, where the dried fruit is loaded into them. Removed by fork lift truck, which transports them to the warehouse, they are stacked one upon another to a height of approximately 20 ft.

As processing operation demands develop, the bin box with its 64 cu. ft. of dried fruit is lifted from storage by another fork truck and taken to the proper receiving hopper. This fork truck has a fixture with side plates to hold the bin boxes in place. A hydraulic pump on the fork truck causes the fork carriage to rotate, turning the bin box upside down with the dried fruit cascading into the process hopper.

This is another fine example of how costs can be cut when the whole problem is analyzed, instead of piecemeal. The unit load method of receiving and storing is a cost cutter alone: however, the savings were more than doubled when Rosenberg and the fork truck manufacturer looked into the problems of feeding the actual processing stations.

Fork lift trucks are more and more becoming tools of service. Perhaps you have some in your operations being used to transport and vertically store your materials. You may also have some productive points which can better be served by a special attachment on your truck.

We in The Material Handling Institute are constantly amazed at the never ending variety being offered, each one of which makes the truck take on the dexterity of a man's hands with greater capacity and safety. Tell your story to your fork truck supplier and his engineers may already have a cost cutting answer.

ANSWERS TO YOUR PUMP PROBLEMS

These New TUTHILL Catalogs Give You Complete Data on Pumps for

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CATALOG 102—(Model C Series) General purpose pumps in capacities from 2 to 200 g.p.m. and pressures to 100 p.s.i.



CATALOG 103—(Model CK Series) High pressure pumps in capacities from 5 to 200 g.p.m. and pressures to 400 p.s.i.



CATALOG 104—(Model M Series) Coolant pumps with automatic internal by-pass. Capacities from 2 to 50 g.p.m. and pressures to 15 p.s.i.



CATALOG 105—(Model R Series) Automatic reversing pumps in capacities from ⅜ to 200 g.p.m. and pressures to 100 p.s.i.



CATALOG 106—(Types S and SA) Stripped pumps for built-in applications. Capacities from ½ to 200 g.p.m. and pressures to 100 p.s.i.



CATALOG 107—(Type SU) Multiple V-belt pumping units in capacities from 2 to 50 g.p.m. and pressures to 300 p.s.i.

Tuthill pumps are of the rotary, internal-gear, positive displacement type.

Any one or more of these Tuthill catalogs are available on request. They include individual pump guides to help you select the Tuthill pump best-suited to your requirements. Please ask for catalogs by number.

TUTHILL PUMP COMPANY

Dependable Rotary Pumps since 1927

939 East 95th Street, Chicago 19, Illinois

Sales Representatives:

Westco Pump Sales Company, 85 Industrial Street
San Francisco 24, California, VAlencia 6-5104

Wagner Hydraulic Company, 10633 Wellworth Avenue
Los Angeles 24, Calif., ARizona 8-5332 and BRadshaw 2-2091

. . . for more details circle No. 39

Specify items desired

See listing page 122, Yellow Section



BANDS OF STEEL strapping, anchoring plates, and antiskid plates have replaced heavy and costly dunnage in this rail car load.

Materials handling saves money . . .

Strapping replaces dunnage

By GERALD J. HOSKING
Strapping Representative
Brainard Steel Division
Sharon Steel Corp.
San Francisco

STEEL strapping can be used to maintain load stability within the carrier in place of expensive and heavy dunnage. A Western manufacturer's experience with the substitution is a good example of how.

The load consisted of 80 wooden boxes, each 23x48x21 in., with runners on the bottom for handling by lift truck. Each box was reinforced with two ¾x.020-in. straps. The dimensions of the boxes were such that by any arrangement a space of at least one foot was left between boxes and rail car wall.

Carloads were formerly secured through the use of expensive and heavy dunnage in the form of 2x10-in. and 2x4-in. timbers. These were placed at one end, at the side, and in the center of the load. In addition, 2x10-in. timbers were run across the top of the boxes to prevent them from vertical movement.

Steel strapping has replaced the dunnage and has reduced loading and unloading costs. The boxes are divided into eight units consisting of ten boxes each, five long and two high. Four of these units are then secured in one corner of the front end of the rail car and four are secured in the opposite corner of the back end of the car.

Each unit is secured as follows:

1. Two 1¼x.035-in. straps are run through 2 anchor plates each and the plates are nailed to the floor of the car.
2. The straps are placed so that the runners of the bottom boxes rest on them.
3. Boxes are placed in the car two at a time, one on top of the other.
4. Anti-skid plates are placed in varying quantities between the boxes to prevent slippage.
5. When the ten boxes comprising a unit are in position, corner protectors are placed on the top corners and the straps are tensioned and sealed.

On the first loads, after all eight units were secured, two straps were placed across each doorway and two blockings were placed in the space which was left between the four units in the front and the four in the back. Later, it was found that the boxes rode safely without these last two steps and they were discontinued.

Anchor plates provide a means of preventing side slippage of the load and also act as a brake on any fore and aft movement. The anti-skid plates are used to prevent the top boxes from being jarred out of position.

Corner protectors protect the boxes and enable the easing on of straps and thereby provide a tighter strap.

COMPACT-



Newest addition to a fleet of Whites owned by United Ready Mix Concrete Co., South Gate, California, hauls 4 yards legal payload on 2 axles and a wheelbase of only 127"

yet Packed with Payload!



United also depends on Whites for hauling gravel. This 18 ton capacity dump trailer is powered by a White 22 PLT

When it comes to the payoff combination of maximum payload and minimum overall length—White's 3000 is in a class by itself. Along with greater hauling capacity, you get unmatched maneuverability, due to shorter wheelbase and wide-tread front axle.

You, too, can profit by White's "specialized design". It will pay you to call your local White Representative.

White

THE WHITE MOTOR COMPANY

CLEVELAND 1, OHIO

Factory Branches, Distributors and Dealers Everywhere

FOR MORE THAN 50 YEARS — **THE GREATEST NAME IN TRUCKS**

For more details circle No. 40 on Reader Service Postcard

THE Lufkin LINE

GEARS FOR INDUSTRY
AND
OIL FIELD PUMPING EQUIPMENT

OIL MAN FROM ANKARA



V. J. Fawcett

In this column it has been our good fortune to report recently the shipment of Lufkin Pumping Equipment to Turkey, as specified by Turkish Petroleum Corporation, Ankara, and the Ralph M. Parsons Company of Los Angeles.

Also, it has been our good fortune to add a new petroleum producing country in which Lufkin equipment is being installed for the first time.

More recently, at the Los Angeles Rotary No. 5 luncheon it was our good fortune and pleasure to meet Schap E. Birgi, D.Sc., director general of the Turkish Petroleum Corporation, all the way from Ankara, and to hear of the remarkable strides which Dr. Birgi's country is making in the development of its petroleum resources.

An enthusiastic Rotarian of many years' membership, Dr. Birgi soon moved on to Chicago to attend the Golden Anniversary of the Rotary Club, where delegates gathered from the four corners of the globe.

Then with a stopover in New York City, Dr. Birgi was on his way to Rome where he participated in the World Petroleum Congress just concluded and on home to Ankara.

To a fine gentleman and world traveler we trust that we may have the pleasure of another visit soon, and Lufkin is proud to be a participant in the development of Turkey's fast growing petroleum industry.

Lufkin FOUNDRY
& MACHINE COMPANY

PACIFIC COAST DIVISION
5959 S. Alameda St., Los Angeles 1, Calif.

NORTHWEST SALES AND SERVICE
J. W. Minder Chain and Gear Co.
307 So. East Hawthorne Blvd.
Portland, Ore.

Dallas Lufkin, Texas New York



FULLY-LOADED pallets are handled at the rate of 200 per hour on this new in-floor pallet mover at Germain's Inc. seed plant.

Materials handling saves money . . .

Shoot for simplicity

BY aiming at simplicity in consolidating and coordinating its horticultural supply operations, Germain's Inc., of Los Angeles, was able to get off with a materials handling installation that ran less than $10,000.

Here was the problem: a company functioning as nine separate businesses, each with its own buyer, sales force, and warehouse. Five of these divisions were in separate buildings. Part of the job was to coordinate operations so they could begin to function as much like a single unit as possible.

All operations are now consolidated, with the exception of the "Premium" department, which is not really in the horticultural supply business. The new plant occupies 230,000 sq. ft.

Here are some of the operations:

Flower seed department stocking thousands of different varieties, some costing over $200 an ounce.

Wholesale horticultural hardware department, stocking about 11,000 items and filling about 500 orders a day.

Bulb department filling up to 1,200 orders in a single day.

Field seed division, which also runs the milling division, can mill about 5,000,000 lb. of seed this year. Division actually handles, exclusive of this, about another 5,000,000 lb. of seed in normal operations.

Lawn seed is packed with fully automatic equipment on two lines, 1-lb. and 5-lb., and in season runs both lines steady at about 45 packages per minute per line.

In-floor pallet mover

Here was the result: By rearrangement of the departments and changing order systems and procedures, only approximately 160 ft. of belt conveyor 24 in. wide were used to tie in the operations of all the departments to the order consolidation area, where the orders are made up on pallets and placed on a pallet conveyor.

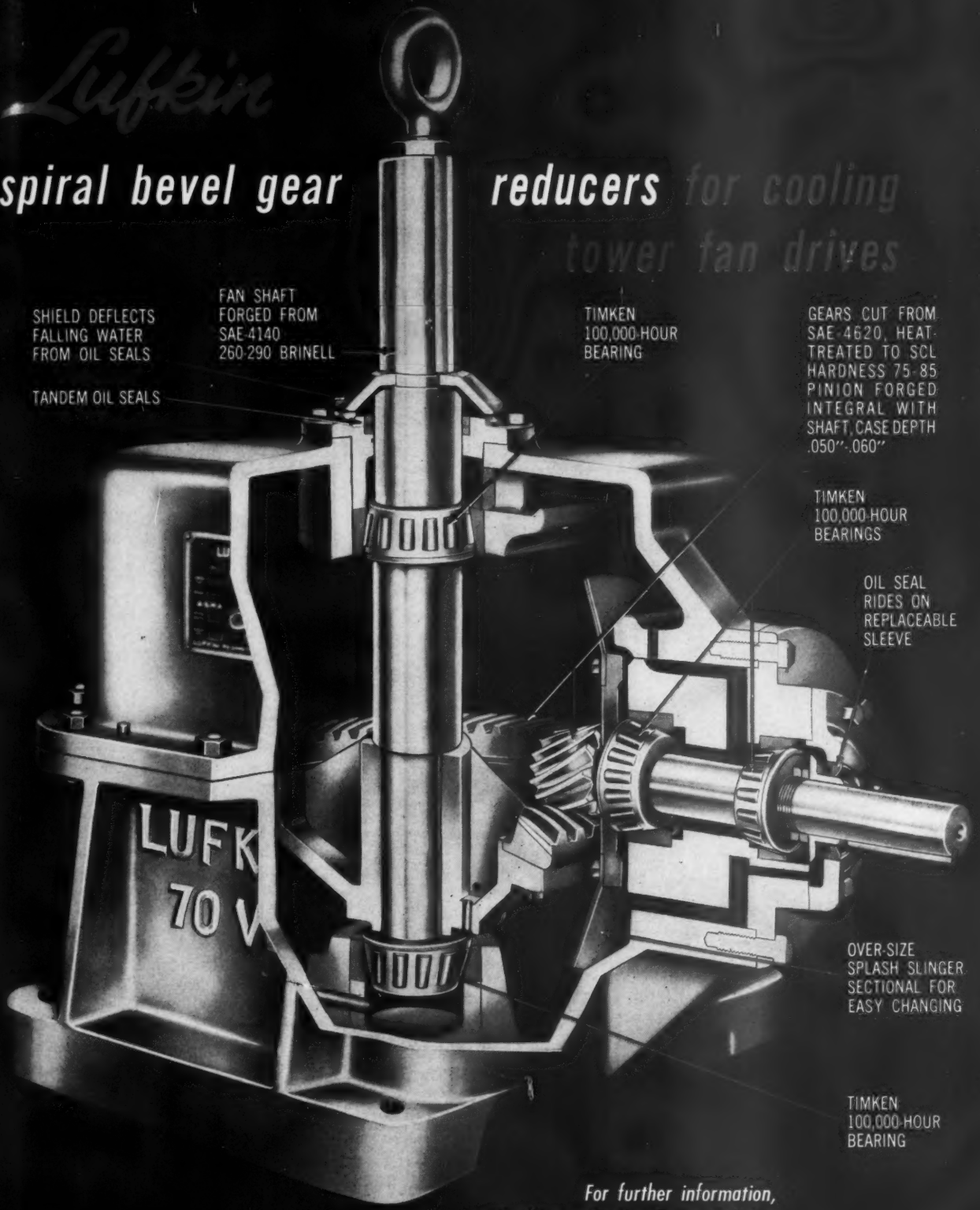
The pallet conveying system, with an hourly capacity of 200 loaded pallets weighing 2,000 lb. each, takes the orders to the shipping section. The pallets are placed on power-driven roller conveyors placed in the floor, and their spacing allows use of Lewis-Shepard pallet jacks to put the pallet loads on the conveyor. Loads move automatically, making as much as a 90 deg. turn, and can be removed in the shipping department with the pallet jacks, which are both electric and hand-powered.

This system was designed by W. B. Semco, industrial consultant. Both electric and hand powered pallet jacks were supplied by the M. E. Canfield Co. of Los Angeles.

For more details circle No. 41 on Reader Service Postcard →

Lufkin

spiral bevel gear reducers for cooling tower fan drives



For further information, write for our Cooling Tower Bulletins

Lufkin **FOUNDRY & MACHINE COMPANY**

LUFKIN, TEXAS

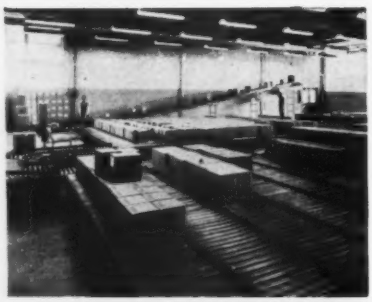
Branch Sales and Service: Houston • Dallas • New York • Tulsa • Los Angeles • Seminole • Oklahoma City • Corpus Christi • Odessa
Kilgore • Wichita Falls • Casper, Wyoming • Great Bend, Kansas • Effingham, Illinois • Duncan, Oklahoma
Brookhaven, Mississippi • El Dorado, Arkansas

ON THE WEST COAST, 5959 South Alameda, Los Angeles

MATHEWS

BUILDING THE BEST IN MATERIALS HANDLING EQUIPMENT FOR 50 YEARS

The Mathews line of package handling equipment is complete, including all types of gravity and power conveyers and special conveying machinery. Whatever the requirement — a few sections or a complete system — or whether the loads weigh 1 lb. or 30 tons, it is a job for Mathews engineers.



A complete package conveyer system, including gravity roller conveyers, live roller conveyers, and reversible belt conveyers—applied to maintain a continuous flow of material through production, storage, and shipping.



The Mathews line includes light (Chainveyor), medium, and heavy-duty overhead trolley conveyers. Transverse bends in this system bring small castings from ceiling to working level.



This system of roller and belt conveyers takes the hard work out of handling and inspecting passenger car and truck tires. The tubular-type supports shown provide easy, infinite adjustment of the conveyer lines.



Part of a warehouse bag handling system consisting of reversible, inclined and level, general purpose belt conveyers.



Mathews builds a complete line of standardized conveyers — including portable roller and wheel sections in either steel or aluminum, portable belt conveyers, ball transfers, lumber conveyers, stevedore dollies, and chain store check-out belts.

50th Anniversary MATHEWS CONVEYERS 1905-1955

MATHEWS CONVEYER COMPANY WEST COAST
SAN CARLOS, CALIFORNIA

LOS ANGELES · PORTLAND · SEATTLE · DENVER
FORT WORTH · DALLAS · HOUSTON · EL PASO
HONOLULU, T. H. · SALT LAKE CITY

Engineering Offices or Sales Agencies in Principal Western Cities

Export Representative—Foreign Trade Division of New York Hanseatic Corporation

. . . for more details circle No. 42 on Reader Service Postcard
See Directory listing page 116, Yellow Section

Multiwall sacks — items to consider

By DR. WALTER F. HOLZER
Crown Zellerbach Corp.
San Francisco

USE OF multiwall sacks as containers for bulk materials is becoming more and more important to the industrial West. Several factors which affect the usefulness of the bags must be considered prior to their manufacture to serve a given purpose.

• **Strength.** The paper must be strong enough to hold the material and have enough reserve to withstand a drop, fully loaded, from a height of several feet without splitting. It must also be able to withstand reasonably hard blows tending to puncture it.

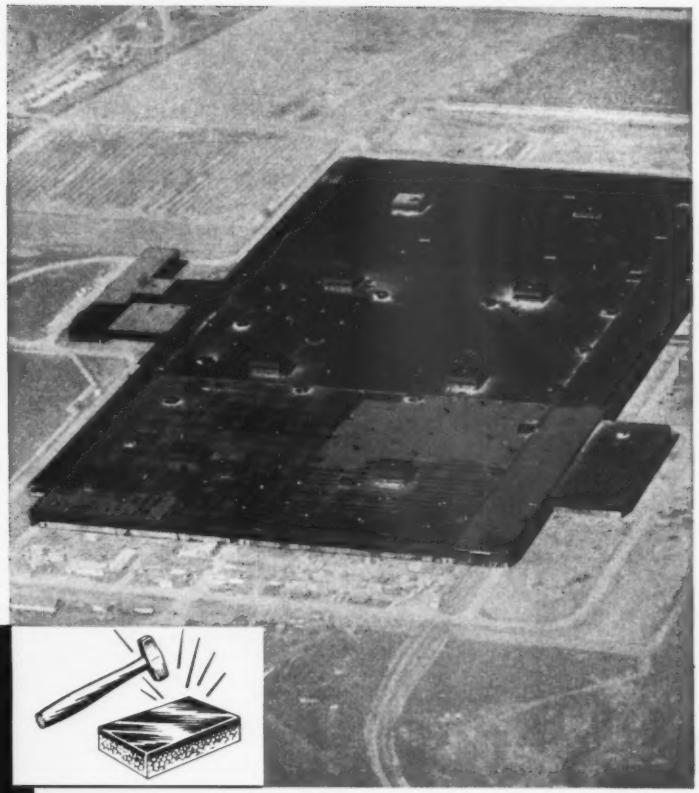
• **Porosity.** Especially in valve bags used with dusty materials, the paper must be porous enough to allow the air to escape as fast as the sack is filled, yet not so porous as to allow the material to seep through. Probably the most difficult application in this respect is packaging carbon black. A sackful of this fluffy material is sealed and then compressed to a small volume to conserve space. The air must escape rapidly through the paper so the sack won't explode, yet the impalpable powder must be retained.

• **Construction.** We must take into consideration questions such as: number of plies needed and the weight of each, whether the end should be sewed or pasted, what adhesives are needed, design of valves when used, to name a few. And did you ever consider that too high a finish on the paper might make the bag so slippery that piles in warehouses would not be safe?

• **Resistance of the paper.** All multiwall sack paper is sized to resist water in order to protect its contents. Beyond this some of this paper is now wet strengthened to retain a considerable portion of its strength when thoroughly soaked. For moisture resistance a ply of two sheets laminated with asphalt is inserted. Such paper is also used to withstand action which will rot ordinary paper. Coatings of various types are applied on the innermost ply for chemical resistance, or release properties. Repellents are sometimes incorporated in the outer ply.

Ford

picks a floor with a FUTURE



1,350,000 square feet of floor armor-plated with FERRO-FAX

Photo by Bethlehem Pacific Coast Steel Company

When you lay over **forty acres** of 6" concrete floor . . . as FORD did in its new $50 million plant at Milpitas, California . . . you go to a lot of trouble to pick the best way to get a long-lasting, wear-resisting, dustproof job.

Like FORD, you'll find that FERRO-FAX floors, large or small, take the grueling punishment of heavy traffic and years of service with minimum maintenance. That's because FERRO-FAX literally armor-plates your floor with a homogeneous metallic surface. Send in the coupon today for the facts that convinced FORD.

A Subsidiary of Sun *Chemical Corporation*

HORN

A. C. Horn Co., Inc.

HORN • HUDSON • WILLEY (paints, maintenance and construction materials, industrial coatings) • WARWICK (textile and industrial chemicals) • WARWICK WAX (refiners of specialty waxes) • RUTHERFORD (lithographic equipment) • SUN SUPPLY (lithographic supplies) • GENERAL PRINTING INK (Sigmund Ullman • Fuchs & Lang • Eagle • American • Kelly • Chemical Color & Supply Inks) • MORRILL (news inks) • ELECTRO-TECHNICAL PRODUCTS (coatings and plastics) • PIGMENTS DIVISION (pigments for paints, plastics, printing inks of all kinds)

FREE INFORMATION!

A. C. Horn Co., Inc., Dept. H9-856
252 Townsend Street, San Francisco, Calif.
Please send free information on FERRO-FAX.

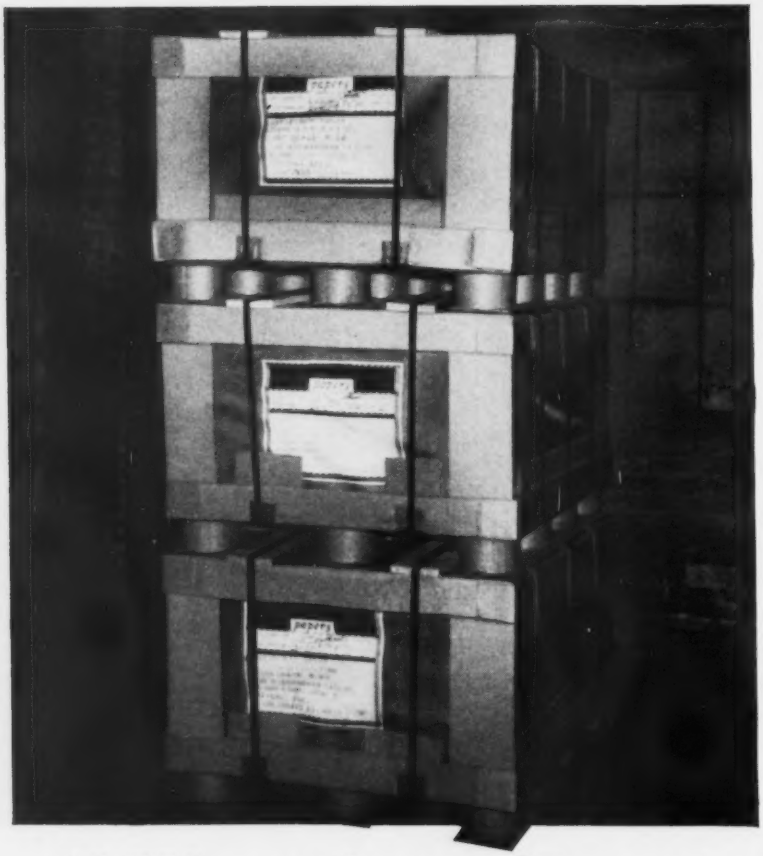
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Firm Name_____

Address_____

City_____ State_____

For more details circle No. 43 on Reader Service Postcard



12,000 pounds on a 35-pound Signode Addison-Semmes pallet!

Here—from Signode—is another way to cut shipping costs which has proved successful in hundreds of plants. It's the use of Signode Addison-Semmes expendable fibreboard pallets.

These pallets save money because they're lighter. For example, each pallet in the picture above weighs 35 pounds. Each holds a 4,000-pound load. Each replaces a skid weighing 150 pounds—a weight saving of 115 pounds per unit, or 2300 pounds per carload, in this case. At a freight rate of $1.00 per cwt., this saves $23.00 per car on freight alone.

Your customer benefits, too. The pallets are easier to handle with their 4-way entry. They take up less warehouse space, empty or loaded. And they're easy to dispose of—can be sold as waste paper.

Signode Addison-Semmes expendable fibreboard pallets have many other advantages. They are available in sizes and weights your shipments require. Send for the facts today.

Signode now licensor

Signode Addison-Semmes expendable pallets will continue to be made by the former Addison-Semmes licensees—a selected, nationwide group of fibreboard container manufacturers.

SIGNODE ADDISON-SEMMES PALLETS

SIGNODE Steel Strapping Co.

383 Brannan St., San Francisco 7, Calif.
659 E. Gage Ave., Los Angeles 1, Calif.
1519 N. W. Irving Street, Portland, Oregon
Offices coast to coast. Foreign Subsidiaries and Distributors world-wide.
. . . for more details circle No. 44 on Reader Service Postcard
See Directory listing page 120, Yellow Section

1955 BANNER YEAR, equipment bookings show

BOOKINGS of materials handling equipment purchases for the first five months of 1955 are far ahead of the comparable months of 1954, according to the Material Handling Institute. Prospects are that 1955 may be a banner year with bookings of $1.5 billion.

This is the first of a series of monthly charts to be issued by the Institute. The service has been made possible through the cooperation of the following five trade associations: Assoc. of Lift Truck and Portable Elevator Manufacturers; Caster and Floor Truck Manufacturers Assoc.; Conveyor Equipment Manufacturers Assoc.; The Industrial Truck Assoc.; and the Monorail Manufacturers Assoc.

50% MORE USE of existing storage



SORTING incoming loads on receiving docks. (Photo courtesy of Elwell-Parker Electric Co.)

TWO 2,000-lb. capacity fork trucks and one 4,000-lb. capacity low-lift platform truck have accounted for 50% more use of storage space and speedier handling at the Baker and Hamilton Co., San Francisco, Calif., wholesale hardware house.

Incoming loads are sorted on the receiving dock, skidded, or palletized and then moved to storage areas inside the building by the high-lift fork trucks. The materials are stacked three or four pallet loads high.

As needed for orders, the trucks pick off goods, speedily transfer them to conveyors or four-wheel floor trucks which are used to assemble and carry the items to the shipping room.

For more details, adv. opposite page, circle No. 45 ⟶



ANACONDA INTERLOCKED-ARMOR Cable is installed on simple racks and eliminates the need for conduit. Installation work is finished often in half the time required for other cables.

Instead of installing cable plus conduit...

Cut installation time and cost with cable with its own inbuilt flexible conduit!

When you expand or relocate your power feeders, Anaconda Interlocked-Armor Cable puts you into *full* operation days—sometimes weeks—sooner.

Because it is made with its own tough yet flexible armor, Interlocked-Armor Cable is installed without conduit. Installation time and costs are slashed.

It is laid quickly—indoors or out—on light, easily installed racks. It is trained smoothly around corners, columns and other obstructions in *long, uninterrupted* runs. And this cable's metal tape armor affords high protection against damage.

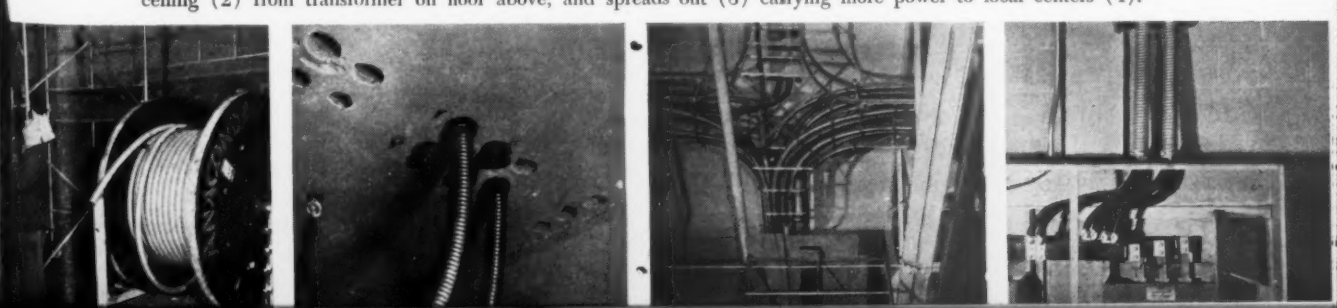
Available in multiconductor construction in sizes No. 6 Awg to 750 Mcm—varnished-cambric insulation up to 15 kv—Underwriters' approval for 600 volts and 5000 volts. Also available with rubber or plastic types of insulations.

Why not talk to the Man from Anaconda about modern, practical Interlocked Armor Cable today? Or, for information, write: Anaconda Wire & Cable Company, 25 Broadway, New York 4, N. Y. 55281

ANACONDA®

FASTEST WESTERN SERVICE – Anaconda's Western Distributors and expanded and modernized Orange, California mill which fabricates copper and aluminum wire and cable for *every kind of application* assure West fastest possible service on all needs. See Anaconda Sales Offices: Los Angeles, San Francisco, Seattle.

METALWORKING PLANT expands its power system with Anaconda Interlocked Armor Cable (1). Cable drops from ceiling (2) from transformer on floor above, and spreads out (3) carrying more power to local centers (4).



M-H distributors organize

New equipment group dedicated to industry service, and Robert H. Braun of Los Angeles is chosen to head it up

TO THE WEST, mother land of many of the outstanding developments in the history of materials handling, the people who are the connecting link between the users of such equipment and the manufacturers of it, have turned for leadership.

This group, last in the industry to organize, are the distributors. For their president they chose, at their first meeting in Chicago in May, Robert H. Braun of Los Angeles, president of the Robert H. Braun Co. He has been identified with materials handling since 1919, has been a distributor since 1931, and has been personally responsible for many advances in the art of materials handling.

He was elected to head the Material Handling Equipment Distributors Assoc. largely as a result of his vigorous stand that such an organization must be based primarily on service to the industry as a whole.

Users have long been represented by the American Material Handling Society and the Society of Industrial Packaging and Materials Handling Engineers. Later the manufacturers set up the Material Handling Institute, and special groups such as the conveyor and caster people have had their organizations for some years.

As pointed out by Mr. Braun, the West has pioneered some of the more important developments of materials handling.

The first uses of fork-truck pallet handling in stevedore operations at shipside began on the West Coast. Unique developments necessitated by aircraft originated here, as well as storage and distribution of food products in large chain-store grocery operations. Mechanized handling of food products, both in processes as well as storage and distribution, were originated by large canneries in the West.

More recent developments include mass handling of truckloads of lettuce from field to vacuum-cooling processing plants, the use of 50,000-lb. capacity straddle-carriers for the handling of billets, pipe, and steel in the steel industry, and the mechanized handling, storage, and distribution of citrus and other fruits for the table, not to mention numerous additional methods of handling of less startling proportions.

By
ROBERT H. BRAUN
President
Robert H. Braun Co.
President
Material Handling Equipment
Distributors Assoc.



WHILE materials handling had its beginning many years ago, nevertheless not until the turn of the twentieth century was it recognized as offering solutions for cost reduction to the growing industries of our country.

The newer concept of mechanization first became generally applicable to operations handling large tonnages of bulk materials, such as grain, coal, coke, rock, sand, gravel, cement, flour, and other milling. To some degree, it was also applied in package and unit handlings in manufacturing processes.

In the last 15 or 20 years, however, great progress has been made in the mechanization of handling, along with the expansion of our industries and the need for cost reductions. Likewise, many new developments came into use in solving the complex handling problems of fast growing industry in the transportation and storage of goods, as well as the higher development of manufacturing processes.

During the earlier years referred to above, the designers and manufacturers of materials handling equipment made their engineering and sales contacts direct with the user. With the accelerated growth of more recent years, many manufacturers of materials handling equipment found their markets so widespread and active as to abandon the "direct contact" method of designing and selling equipment since it was uneconomical and time consuming as well as difficult for them to render installation or repair services to their customers.

Consequently, they placed such operations in the hands of manufacturers' agents, representatives, dealers, and distributors of materials handling equipment. As such, the distributor, or agent, assumes important obligations to the user of the equipment, to fellow distributors, and to the designer and manufacturer of the equipment.

Perhaps most important in these obligations is the one to the customer or user of the equipment itself, and here the distributor or agent must first assist the user in studying the handling problem involved, to the end that the operation will reflect the greatest economies.

Secondly, he must have full knowledge of the equipment offered, its performance, etc., in meeting the user's requirements.

Third, he must also assist the user in the proper installation, care, and maintenance of the equipment itself.

The distributor or agent has an obligation to fellow distributors in the



"Very Big" on the Scene at Wenatchee

This scene shows two of twenty-six Horton® welded flat-bottom steel storage tanks at the new Alcoa smelter, Wenatchee, Washington. The tanks are used to store alumina, cryolite, limestone, fuel oil and other materials.

The structures above are typical of the many types Chicago Bridge & Iron Company regularly builds for industrial service. Our plants are completely equipped to design, engineer, fabricate and erect welded steel plate structures to meet *your* specifications. Write our nearest office for further information.

CB&I

Chicago Bridge & Iron Company

Atlanta • Birmingham • Boston • Chicago • Cleveland • Detroit • Houston
Los Angeles • New York • Philadelphia • Pittsburgh • Salt Lake City
San Francisco • Seattle • Tulsa • Washington

Plants in
BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.

For more details circle No. 48 on Reader Service Postcard

ethical conduct of his business, by adhering to fair trade practices, by constantly improving his knowledge of materials handling methods, and by keeping posted on legal matters and legislative bills affecting his operations.

He also has an obligation of full and proper support to the principals he represents: (1) to adequately cover the territory assigned to him; (2) to assist, through knowledge of users' problems, in the improvement or development of new projects; (3) where services are required, to carry adequate repair parts and provide expert mechanical services.

Purpose

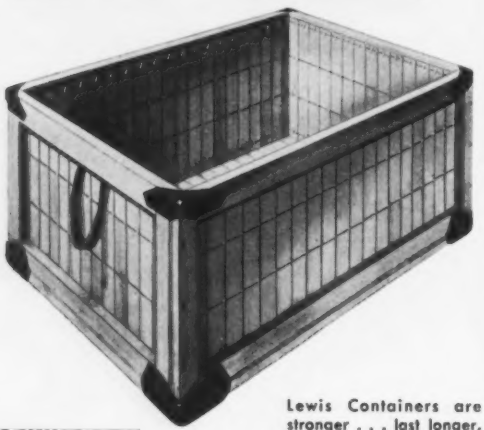
These obligations are covered by the objects and purposes of a newly formed organization, The Material Handling Equipment Distributors Assoc., of national scope, founded at a meeting held May 16, 1955, in Chicago. Membership in this new organization is an assurance that the distributor will promote and advance the art of materials handling by acquainting users with modern materials handling methods, and keeping them informed of new developments of the industry.

The Association will promote activities and programs of an educational nature, designed to improve business practices, mechanizing programs, and services, as well as to encourage a spirit of cooperation among the members of the industry. This includes cooperation with other industries and organizations, in matters of common interest, as well as with government agencies in matters of national interest. It involves carrying out whatever is necessary and proper to accomplish those objects which shall be recognized as proper and lawful for trade associations in the promotion of the interests of the materials handling industry, and which are also consistent with public interest.

The educational and assistance programs to be carried out by the Material Handling Equipment Distributors Assoc. merit the earnest consideration of any distributor, manufacturer's agent, or representative of the manufacturer of materials handling equipment, in every category of materials handling, including conveyors, hoists, cranes, industrial-powered fork trucks, hand trucks, in fact, any and every type of handling unit.

LEWIS

INDUSTRIAL CONTAINERS



STACKING BOX

Lewis Containers are stronger . . . last longer, and offer greater product protection, easier handling and stepped-up material flow. There is a Lewis Container to fit every need.



PLEXTON (Fiber Glass) TOTE PANS



Stack-n-Nest*

Here's strength, durability, and light weight molded into a tote pan that will mean greater pay loads and ease of handling in your plant. Impervious to oil, water, and most chemicals . . . can "take it" year in, year out.

*Patent Applied For

Representatives on West Coast:

IRVING G. KING & CO.
821 Mateo St., Los Angeles 21, Calif.

E. C. BUEHRER ASSOC., INC.
351 5th St., Oakland 7, Calif.

VALLEY FORKLIFT RENTAL & EQUIP. CO.
2424 S. Railroad Ave., Fresno 6, Calif.

A.I.M. PLASTICS CO.
408 Broad St., Seattle 9, Wash.

OREGON HANDLING EQUIP. CO.
2949 North West St. Helen's Road
Portland 10, Oregon

EQUIPMENT SUPPLY CO.
16 Post Office Place, North, Opposite P.O.
Salt Lake City 1, Utah

. . . for more details circle No. 49 on Reader Service Postcard

See Directory listing page 115, Yellow Section

SINGLE HANDLING replaces 125 steps

ONE power handling has replaced the previous 125 manual handlings in Western Pacific Railway Co.'s exchange of journal brass from sub-store to stores warehouse to brass supplier.

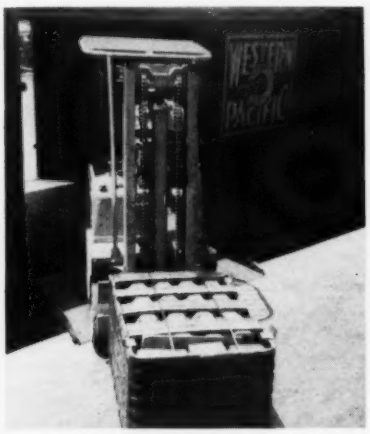
Western Pacific secures brass journal bearings from Magnus Metal Co. in Los Angeles on an exchange basis. Scrap brass is shipped, when a quantity has accumulated, from various Western Pacific sub-stores to the railroad company's Sacramento stores warehouse. It is then consolidated and shipped to Magnus Metal Co. in Los Angeles.

The supplier then returns the same quantity of new journal bearings to the stores warehouse, where it is shipped to sub-stores as ordered. In the past, the new brass was loaded on the floors of box cars and blocked. This individual treatment was not only costly time-wise, but it often caused damage to the bearings.

Upon receipt at Sacramento, the bearings were loaded manually into

shipping containers and dispatched to sub-stores, another time-consuming and sometimes damaging operation.

Handling costs and damage have been reduced through the use of Powell Pressed Steel Co. tiering box containers. The supplier packs an average of 125 bearings in each pallet box and the boxes are shipped via boxcar to the Sacramento stores warehouse. The boxes require very little blocking to insure a safe ride.



NEW bearings are shipped in pallet boxes.

Bearings are shipped to the various sub-stores in the same pallet boxes, which eliminates individual handling at the warehouse. Each box is moved via lift truck to the warehouse and out again when it is shipped to a sub-store.



SCRAP brass is returned in the same boxes.

Then, as pallet boxes are emptied through use of the bearings, they are used to ship scrap brass back to Sacramento. The boxes of scrap are consolidated and shipped to the Los Angeles supplier. Once emptied of the scrap brass, the boxes are used by the supplier to ship new brass to the stores warehouse.



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R-W Electrical Industrial Door Operators work easy as pointing a finger... automatically!

You don't pay a penny *extra* for the trouble-free dependability designed and built into every R-W electrical door operator. Like magic, Richards-Wilcox operators open and close swinging . . . sliding . . . folding doors, singly or in pairs, *automatically*—regardless of size or weight.

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Find out how *you* can profit with R-W Automatic Electrical Industrial Door Operators in your plant. For complete details, write today for Catalog No. A-87. No obligation, of course.

R-W equipment sets the standard for every industrial door need

R-W Fire Doors, Hardware and Accessories . . . are Underwriter's and Factory Mutual Laboratories Approved for all Class A-B-C-D-E and F openings, in a wide variety of constructions including flat surface, all-steel and corrugated sheet metal. Sliding, hinged or vertical doors with flat or round track, single or double-link hardware.

R-W Track, Hangers and Industrial Door Hardware are manufactured with precision and care—to give you the ultimate in quality and service. Ask about R-W "Lock-Joint" tracks and hangers for sliding doors . . . R-W hardware for swinging, folding or overhead doors . . . for all types of industrial doors weighing up to 3000 pounds each.

75 YEARS of QUALITY and SERVICE by RICHARDS-WILCOX AURORA, ILLINOIS

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See Directory listing page 119, Yellow Section

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has the most complete line of air and electric vibrators obtainable . . .



AIR — TYPE SA

. . . small vibrators similar to the Type SA for attachment on chutes to insure steady movement or to assist in packaging . . .

large vibrators like the Type F for use on storage bins and shake tables . . .



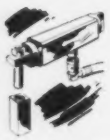
AIR — TYPE F



ELECTRIC — QUIET

also the quiet, air-cushioned and electric vibrator for application where noise is an objectionable factor . . .

portable vibrators like the Type UH in all sizes for gently persuading the movement of not too troublesome baby powder . . .



AIR — TYPE UH



AIR — TYPE LSRR

or the Type LSRR for applying the brute force necessary to shake a railroad car . . .

and construction men find the Type VG settles the concrete better in a form or mold — the foundryman draws his patterns quicker.



AIR — TYPE VG

What's your vibration problem? Permit our engineers to assist you.

Literature on request.



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TRANSFER TABLES eliminate removing containers from conveyor to change direction.



TYPEWRITER-PLATEN order holders allow freedom to work with both hands on drug line.

Materials handling saves money . . .

Usable storage space t-r-i-p-l-e-d

WHEN you handle 500 different items and plan to increase that amount to 1,500, and had not planned on the expansion at the time of warehouse construction, you can turn in one of two directions: acquire more space or get more usable space from the existing facilities.

The Handyspot Co. of Emeryville, Calif., suppliers of drug sundries, household goods, and school supplies to grocery markets throughout Northern California, recently found themselves in this position and not only increased their use of existing facilities, but found that it took less manpower to handle each $1,000 quantity of sales by using the new handling system.

Here's how

Single and double deck Butler pallet racks were installed to store the incoming bulk quantities. A platform-type Revolvator high lift truck was purchased to spot heavy loads to and from the Butler racks. For receiving specific loads, a Revolvator hand lift truck was added to the new system.

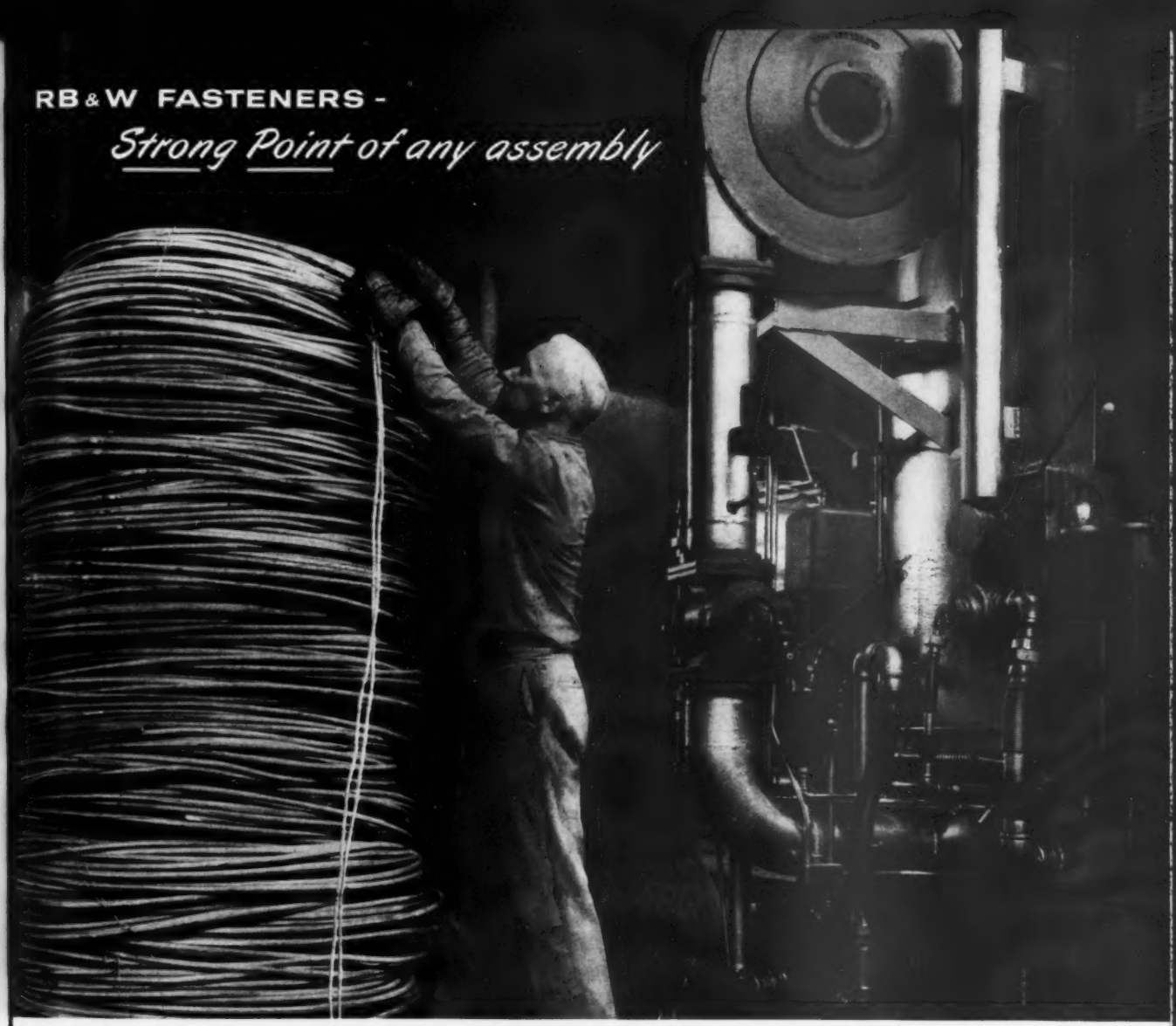
Order-filling in the drug sundries section was improved by pre-grouping items in minimum quantities. Each item has been given a minimum order amount. Racks, divided into spaces the same size as each minimum quantity, are filled from backup shelves. Order pickers place the goods in wooden boxes as indicated on the order form. Each picker handles items within reach and then pushes the box along a Mathews skate conveyor to the next worker.

IBM order sheets are placed in a typewriter platen order holder which was designed and fabricated by the Handyspot people. It consists of the roller-platen portion of a standard typewriter. The orders are firmly held and can be advanced on the roller so that the next item to be picked is well indicated.

This order holder moves on an overhead conveyor, designed by Crane Hoist Engineering of Emeryville, Calif., and is hand operated through the order picking area. The trolley is motor powered to return the order holders to use again. Most of the orders require no packaging

RB&W FASTENERS -

Strong Point of any assembly



Where the heat's on to lift bolts and nuts out of the ordinary

You won't see these spheroidizing furnaces in many bolt and nut plants. They call for a big investment of money. But to a company that wants to be sure of conditioning metal for the best bolt and nut possible, they're worth it.

In the photo above, you see R. M. Hubley setting up to anneal coils of wire rod to change its structure for the better. Next, he'll hoist the furnace at right, setting it down over the stacked coils. This special equipment makes it possible to accurately control the heating, cooling and the atmospheric conditions inside the housing.

Working with the most modern and complete facilities, RB&W men can bring to bear the full extent of their experience. And experienced they are . . . most have long years of service in the company. Some have followed their fathers' and even grandfathers' footsteps.

It's this combination of equipment, experience and quality control throughout RB&W plants that assures you more quality for your money . . . a reliable source of supply . . . and strong fasteners that never let you down.

Russell, Burdsall & Ward Bolt and Nut Company, Port Chester, N. Y.

R B & W

110th year

Plants at: Port Chester, N. Y., Coraopolis, Pa.; Rock Falls, Ill.; Los Angeles, Calif. **Additional sales offices at:** Ardmore (Phila.), Pa.; Pittsburgh; Detroit; Chicago; Dallas; San Francisco. **Sales agents at:** New Orleans; Denver; Seattle. **Distributors** from coast to coast.

For more details circle No. 52 on Reader Service Postcard

because Handyspot trucks make scheduled trips to several branch warehouses located centrally in Northern California.

The filled boxes each contain one order. They are transported in special racks in the trucks. A few orders to the extreme northern part of the area are shipped commercially and must be packaged.

Household goods

Orders for household goods and school supplies are filled on a separate line. The conveyor here, manufactured by Mathews Conveyer Co., is a slotted wheel arrangement. Steel frames, into which fiberboard boxes are placed, have been designed to fit the conveyor. Rails on the bottom of the frames fit into the wheel slots and the frame and box is pushed along the line by order pickers.

The household goods line is in a long U shape. At the end of the first length of conveyor, the frame slides onto a transfer table. An operator depresses a foot lever which raises the box to the level of the wheels of a short length of conveyor which runs at a 90-deg. angle to the first conveyor.

Another transfer table provides a second 90-deg. change of direction, and the order picker continues back on the second length of the U shape.

Minimum quantities

Items that have been designated to be ordered in minimum quantities and multiples thereof are packaged prior to stocking in order filling lines. Order blanks provided to customers indicate minimum quantity items.

The items are either sacked in cellophane bags or bound by rubber bands. Space on the order filling racks is divided by short wooden partitions in the exact width of the item or items. The racks are slanted so that when one item is removed the next drops into place.

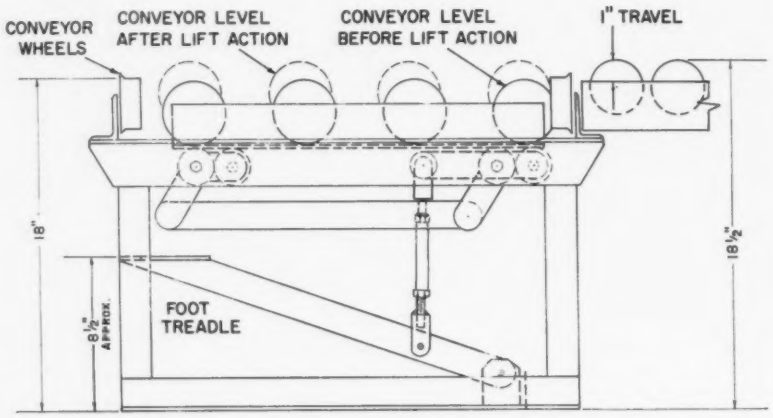


DIAGRAM of transfer table shows how easily change of conveyor direction is accomplished. U-shaped conveyor line facilitates order picking in household goods and school supplies department.

MATERIAL HANDLING HEADQUARTERS FOR

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SEMI-FLOATING PACK uses rubberized hair



NEW package gives floating ride effect through use of rubberized hair in corners.

DOUGLAS AIRCRAFT Co., Inc.'s display of a new semi-floating pack drew considerable attention at the recent annual exhibit of the Society of Industrial Packaging and Materials Handling Engineers in Los Angeles. Conventional shock mounts have been replaced in the new package by several thicknesses of rubberized hair at the corners.

Package contained an A 3D radome which was fastened to a tray and then placed on the hair and held in place by cleats. Packaged item has been subjected to severe tests without damage.

NUCLEAR UNITS gage polyethylene film

THICKNESS of polyethylene coatings on paper for use in the food packaging industry is being accurately controlled with a new electronic computer which features nuclear measuring units at Guardian Paper Co., Oakland, Calif.

One of the measuring units, which utilize invisible rays to measure the critical thickness of the film, gages the basis weight of the paper before it is coated. The other measures the paper after the coating has been applied.

Signals are fed to an electronic computer which figures the thickness and pens it on a wide strip chart recorder for machine operators to observe. This permits operators to spot irregularities and make immediate adjustments.

GOODALL BELTING

Built to Pay Dividends... in Extra Service

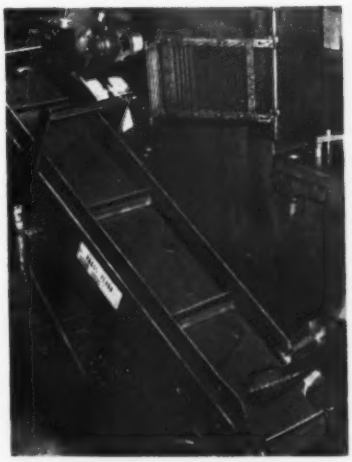




Through exceptionally long, efficient belt life under severest operating conditions, with minimum maintenance expense, Goodall Conveyor Belting continually demonstrates its value and economy on every type of flat or incline conveying job. "Belting at its best" truly describes every length built by Goodall craftsmen.

"SUPER TRIPLE-S"—Goodall's finest Bulk Conveyor Belting . . . with a long-established record of outstanding quality and reliability. Used for handling crushed stone up to 10", ores, slag and other abrasive materials, wet or dry.

"TRIPLE-S" and "La Crosse" will serve with equal efficiency and economy in less severe services.



"HI-CLIMBER" (R)—The Incline Conveyor Belting with a special "Tenacle-Grip" molded surface that keeps packages from sliding or slipping on inclines up to 35°. Other brands available for flat or incline conveyors.

* * *

"SKY-KLEET" (R)—That name identifies specially-designed rubber cleats available on Goodall Conveyor Belting used for handling packages, small parts, stampings, minerals, chemicals, etc., on fixed or portable conveyors. Cleats are integrally molded to the belt, and spaced at any required distance.

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Est. 1870

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See Directory listing page 111, Yellow Section



BLOCK ICE is speedily conveyed to the top of the icing deck.

Materials handling saves money . . .

Speedy handling minimizes ice loss

Icing refrigerator cars at Loma Linda, Calif., has become a fast, automatic operation

CAR icing facilities at Pacific Fruit Express Co.'s Loma Linda, Calif., icing decks have been speeded up to the point where forty 300-lb. cakes of ice can be crushed and loaded into the bunkers of a refrigerator car in one minute.

The new icing deck accommodates 150 cars, 75 on each side. Ice is delivered from an ice plant at nearby Colton, Calif., to the icing deck in special rail cars. Each car carries 164 blocks of ice which weigh a total of 24½ tons. The cars are unloaded manually and dumped on a 160-fpm. plate-chain conveyor which carries the ice to the top of the deck. Here, it is shunted onto one of two 24-in.-wide deck conveyors.

Icing machines

The main conveyor is 3,300 ft. long, the full length of the icing deck. The bypass conveyor is 1,650 ft. long. It serves to carry some of the ice around the first of the two Preco car icing machines. This system eliminates the occurrence of a shortage of ice supply to the icing unit at the far end of the deck. The bypass conveyor, once around the first icer, delivers the ice to the main conveyor and it travels on to the second icer.

The icing machines, developed and manufactured by Preco, Inc., of Los Angeles, pick up the ice from the deck conveyor and put it through a crushing operation. The machine can be set to produce ice in coarse, chunk, or crushed pieces. The breaker, operated by a 7.5-hp. motor, is a steel spiked rotating drum.

A conveyor carries the crushed ice from the machine's 2,000-lb. hopper to a chute. The ice is then dropped via the chute into the refrigerator car bunkers. Each car has two bunkers and they are loaded simultaneously by a double chute arrangement. The operator can control the ice flow to load two bunkers or either one.

Powered by two electric motors, the chute can be swung in a 180-deg. arc which enables it to load cars on either side of the icing deck, and can be raised or lowered through a 30-deg. arc. The maximum down position is about 30 in. from horizontal, which allows the chute to be lowered to within 12 in. of the bunker hatches.

The icing machines travel on rails spaced 12 ft. apart at speeds up to 4 mph. Receiving their electric power from an overhead, three-wire, 440-v. electric system, they move from car to car under the power of a 5-hp. motor.

Ice storage within the hopper is sufficient to handle the crushed ice produced while the machine travels to the next car, thus providing a continuous crushing process.

The crushing-icing operation is usually operated by three men: an icer operator, a crewman who with a picaroon clears chunk which hangs up in the car hatch, and a third man who sweeps the car top clean while the second man seals the hatches.

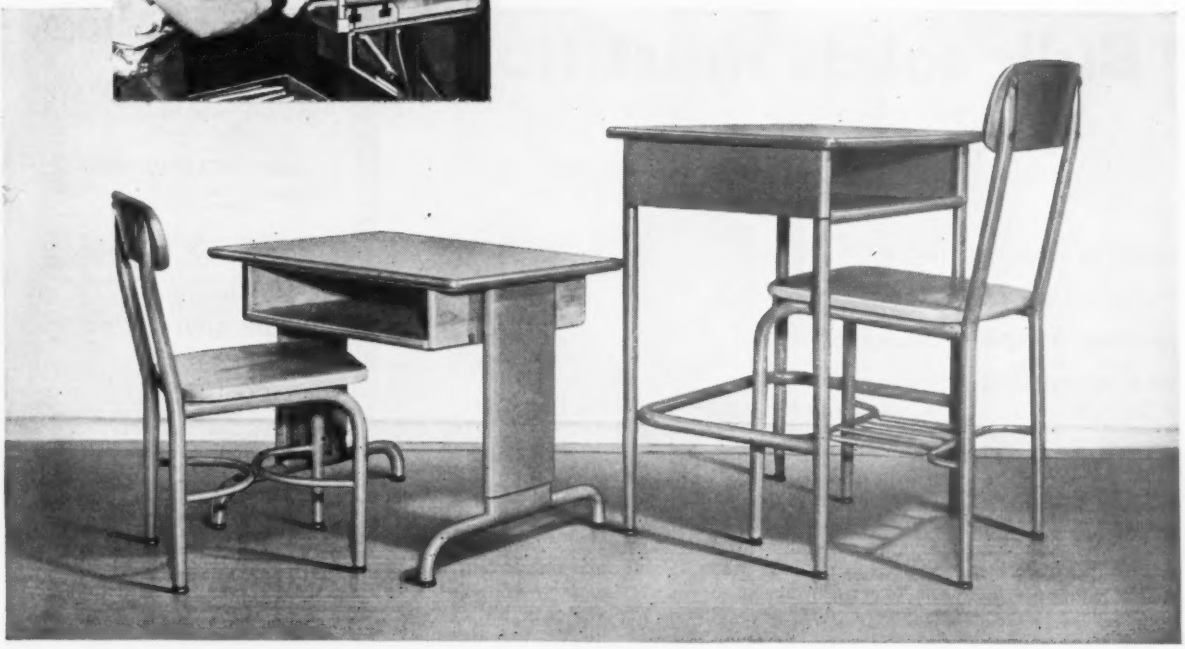
Ice loss from heat of the sun amounts to very little due to the speed with which the ice is handled by the new system.



TRAVELING via a deck chain conveyor, ice is picked up by crushers and loaded into cars.



Early in the Virco production line, end sections and legs for steel furniture (like the student desk and chair combinations, below) are "flash welded".



Whether or not you make school furniture—

You can save money with the one right steel!

School furniture so light that even children can handle it with ease—and it's made of *steel!* Virco Mfg. Corporation uses 18 gauge cold rolled coils from USS for fabricating tubular legs and supporting struts on their widely-known school desks, chairs and tables. These hollow steel members are the key to Virco's light but steel-strong furniture.

This Los Angeles manufacturer asked USS Metallurgists for help in selecting a steel that would readily accept the seam welding needed to close tubular members. By studying the end use of Virco's steel, Columbia-Geneva's technical people were able to recommend and produce the grade of steel that would meet Virco's requirements.

Steel produced in this manner, *for a specific purpose,* shows up in the high quality of your finished products and reduced rejects on your production line. Evaluating your requirements and translating them into steel is our business. Isn't there some place in your plant where the one right steel could be saving you money? One call to Columbia-Geneva could be the answer to your problems.

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For more details circle No. 55 on Reader Service Postcard
See Directory listing page 107, Yellow Section

Materials handling saves money . . .

Bulk solids must flow

How to stop arching or hanging up of material in bins, hoppers, chutes, and processing equipment



By
ANDREW W. JENIKE
Material Handling Consultant
Salt Lake City
Utah

SUCCESSFUL operation of mills, smelters, feed, chemical, and other processing plants depends on the supply of the bulk material at a prescribed rate and time. Any interruption of flow of the material may result in serious repercussions throughout the plant.

One common cause of interruptions of flow is the arching or hanging up of material in bins, hoppers, chutes, and processing equipment. When a solid refuses to flow through a cross-section of a bin, it can usually be noticed that a fairly regular dome has formed across the bin.

The weight of the material is supported by the dome, and therefore the dome is stressed. An analysis of the stresses within a doming bulk solid has resulted in formulas for the magnitude of the critical stress. In the case of a circular cross-section, this formula is:

$$f = \frac{DW}{2}$$

where **f** is the compressive stress, **D** is the diameter of the dome, and **w** is the unit weight of material.

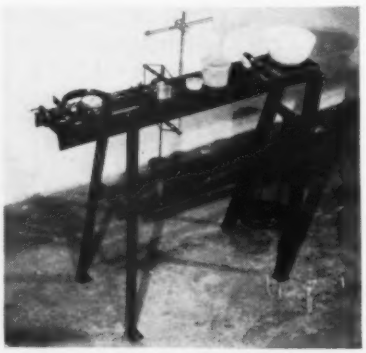
For example, if a material domes over a cross-section 20 ft. in diameter —and that is a large dome—and the unit weight is 100 lb. per cu. ft., the stress is:

$$f = \frac{20 \times 100}{2} = 1000 \text{ psf. or } 7 \text{ psi.}$$

We see that the stress is very small, indeed, and that a bulk solid needs to develop very little strength to have a definite tendency to arch and obstruct flow. As a comparison, the compressive strength of concrete is 2,000 psi. and up, and that of steel is 35,000 psi. and up.

In order to predict whether or not a material will arch in certain circumstances, we have to know what strength the material is likely to develop. Theoretically, the compressive strength of a bulk solid could be measured in the same way as that of concrete—by compressing a test cylinder to failure.

However, this is not practical because a test cylinder made of a bulk solid disintegrates under its own weight. A transverse shear testing machine will measure the strength of bulk solids.



STRENGTH of bulk solids can be tested on a transverse shear testing apparatus. This is an early model of the machine developed by A. W. Jenike, author of this article.

Results

It has been found that the strength of a bulk solid is a function of the degree of compaction which the solid

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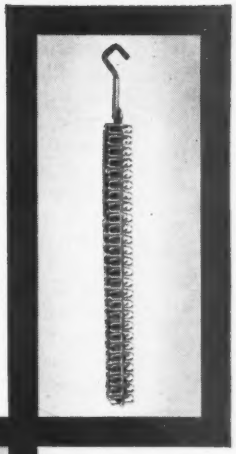
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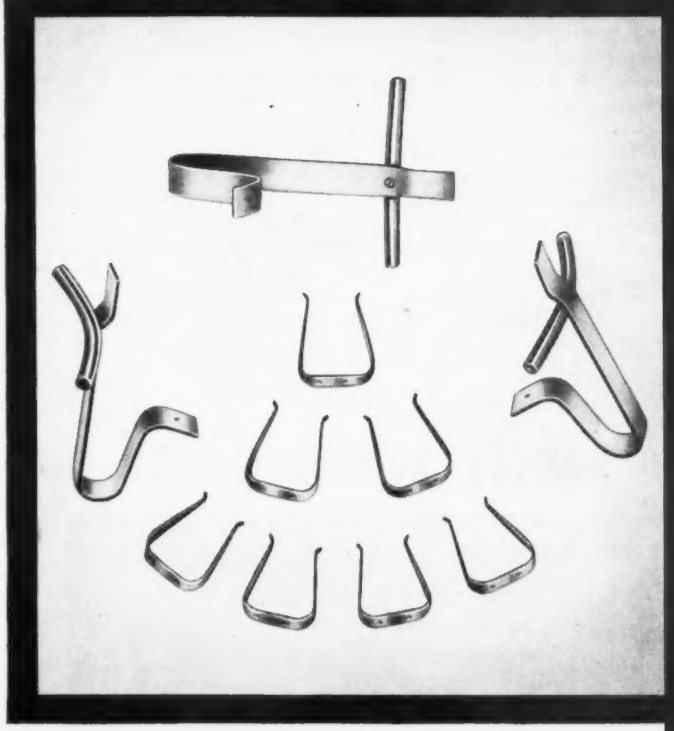
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Spring quality of
REVERE
PHOSPHOR BRONZE
—important to Higgins Rack

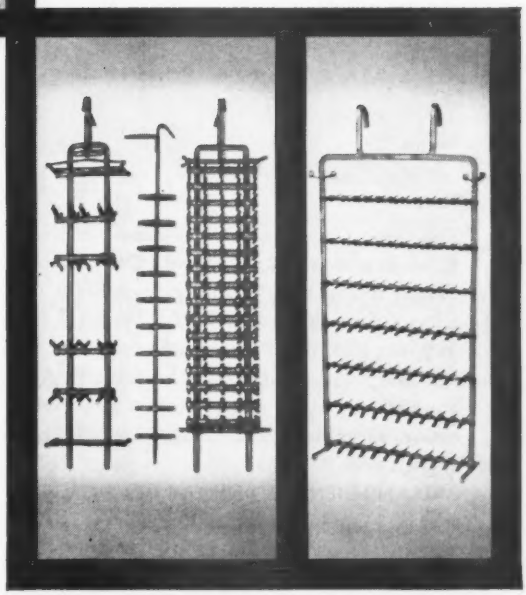




When small parts have to be plated, the problem arises as to how to hold them on the plating racks. If they are not heavy enough to hang by their own weight, spring clips must be used. For such clips, the Higgins Rack Coating Mfg. Co., Hazel Park, Mich., uses spring temper Revere Phosphor Bronze Strip. This material is specified because its spring temper gives it the ability to withstand repeated flexing, so that the clips can be used repeatedly, and that small parts can be snapped in and out of them quickly and without distortion.

The racks to which these clips are attached are made of copper bar; the clips are fastened by riveting and soldering. Everything except the contact points of the clips is coated to prevent deposition of the plating metal and loss of current. Higgins is an important supplier of these special racks to the automotive industry, which uses them to plate both interior and exterior trim. The efficiency and economy of this method helps make handsomer cars and trucks as well as numerous other attractive consumer commodities.

Clips and racks made to special designs by the Higgins Rack Coating Mfg. Co., which buys Revere Phosphor Bronze Strip for the clips from Copper and Brass Sales, Inc., a Revere Distributor in Detroit, Mich.



REVERE

COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

Mills: Baltimore, Md.; Chicago, Clinton and Joliet, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Newport, Ark.; Rome, N. Y. Sales Offices in Principal Cities. Distributors Everywhere.

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has undergone. The function is shown in Fig. 1 and it governs the flowability of a solid. This function leads to the conception of the flow-factor of a bulk solid.

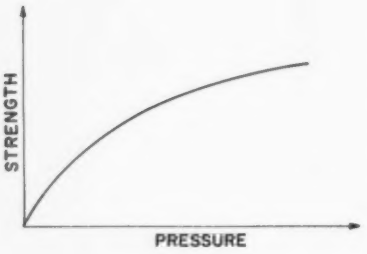


Fig. 1

DIAGRAM shows the strength of a bulk solid as a function of the degree of compaction.

The higher the compacting pressure, the greater the strength which a solid develops and, therefore, the greater the tendency to obstruct flow. An important conclusion in the design for flow is drawn from the flow-factor relation: pressure within material should be kept low.

Pressure builds up as layers of material are piled up one on top of the other. If we could support each layer independently of the other, there would be little tendency to build up strength.

Let us consider the pressures within a material contained in a hopper. The cross-section of a hopper narrows down toward the opening. If material is to flow through this reducing section, the strength of the material must also decrease toward the bottom of the hopper. It is fortunate that in a well designed hopper this is exactly what happens.

Supported by walls

Diagrams of pressures are shown in Fig. 2 for a bulk solid and, as a basis of comparison, for a liquid. In a liquid, pressure increases linearly with depth. But in a solid, pressure increases at first and then falls off toward zero at the apex of the hopper.

This radical difference is due to the fact that shearing stresses in a solid are greater than zero, whereas they are equal to zero in a liquid.

Therefore hopper walls support the bulk solid through shear stress as well as through pressure, resulting in a slower build up of pressure in the material.

The better the support from the hopper, the smaller is the pressure in the material, the less the strength, and the better the flow.

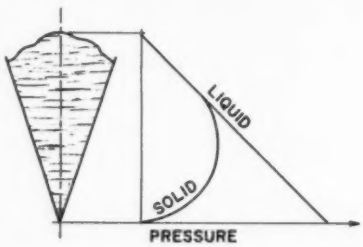
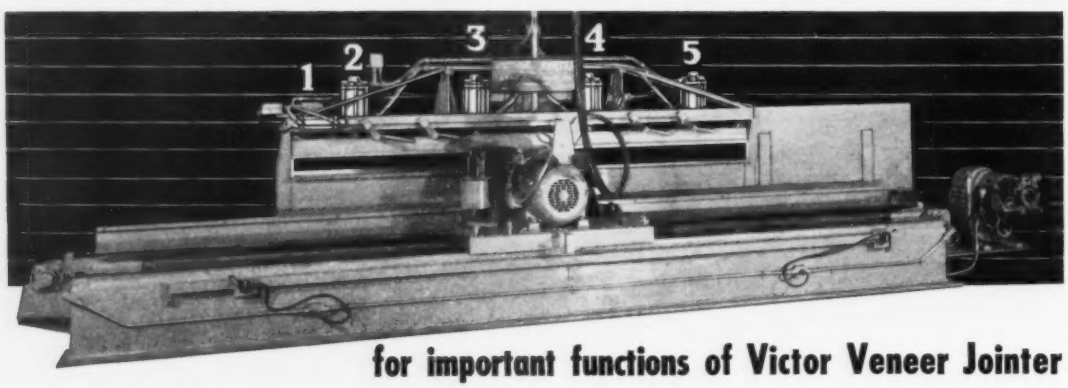


Fig. 2

PRESSURE increases linearly with depth in a liquid. It eventually falls off in solids.

This explains why a steeper and smoother hopper is seldom the answer to an arching problem. Smooth walls provide little support to material, with resulting high compacting pressure and high strength. This also explains why a plate suspended within the hopper often improves flow. The plate pro-

5 NOPAK Cylinders supply pressure and pull



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The Victor Straight-Line Veneer Jointer, built by the E. V. Prentice Co., Portland, Ore., employs a NOPAK Model E 2½" x 6" Cylinder to operate the stops which align the stock, and 4 NOPAK Model D, 6" x 5" Cylinders to exert adequate, equalized clamping pressure on the full length of the stock to be joined. All cylinders are controlled from a single station to provide for fast precision alignment and clamping in a rapid, repetitive work cycle.

This is another example of the important role played by NOPAK Cylinders and Valves in actuating and controlling precision machine movements. Others are shown in the NOPAK Application Manual. Ask your NOPAK Representative to show you this helpful book.

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vides additional support to the material, thus reducing pressures.

Ledges within a hopper can also be used to increase friction between material and wall, Fig. 3. Excessive pressure in the vertical portion of a tall bin can also produce doming of material at the transition from the vertical portion to the hopper.

This condition can be remedied by providing additional support to material in the upper part of the bin. That support can be by means of shelves mounted either at the walls or at the center of the bin, as well as by means of vertical partitions.

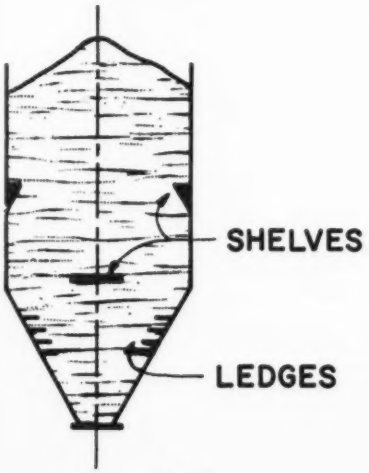


Fig. 3
SHELVES and ledges increase bin friction.

The flowability of a bulk solid is also affected by the moisture content, temperature, and time a material is left to compact. Flow-factor tests made on a small sample of the material during the design stage of a plant provide valuable information which usually leads to the prevention of headaches and the saving of money.

Flow-factor tests predict the behavior of the material under industrial conditions and point to the type and size of bins, feeders, and conveyors which are most likely to be trouble-free. Flow-factor tests also point to the desirable conditions of moisture and temperature. These can often be designed to suit flowability, providing the information is available at an early stage. Alterations in an operating plant are always difficult and costly.

Other articles by the author:

"Flow of bulk solids," Bulletin No. 64, Engineering Experiment Station, University of Utah, March 1954.

"Better design for bulk handling," Chemical Engineering, December 1954.

"How to keep solids flowing in bins and hoppers," Engineering and Mining Journal, 1955 Mining Guidebook.

HEAT TRANSFER seminar to be held

A SEMINAR covering the subject of heat transfer, with particular emphasis on shell and tube heat exchang- [illegible] for September 15 and 16 in Los Angeles.

Dr. Donald L. Katz, professor of chemical engineering, University of Michigan, will preside. The seminar, which follows several similar meetings held earlier this year in other areas, will be sponsored by Wolverine Tube division of Calumet and Hecla, Inc., San Francisco.

NOT YET

THE PROPOSED transfer of the purchase of Navy materials handling equipment from the Navy Purchasing Office at Washington, D. C., to the Navy Construction Battalion Center, Port Hueneme, Calif., had a short life. Not long after the announcement of the transfer early in the year, a review was ordered. *(Editor's note:* end of news item, end of transfer.)

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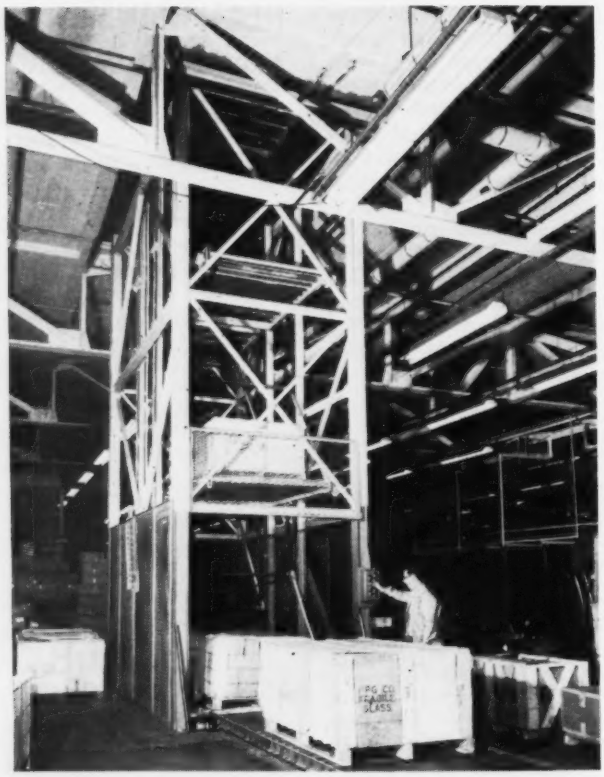
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SECOND STORY supply problem was solved by this conveyor-elevator.

Materials handling saves money . . .

Two-story plant linked up

Conveyor-elevator supplies Chrysler assembly operation



By
MARVIN BIRKEN
Project Engineer
Plant Engineering Department
Chrysler Corp.
Los Angeles

WHEN the Chrysler Los Angeles plant expanded its production facilities in the fall of 1954, the paint and automobile trimming operations were put on the second floor. At the time of installation only a freight elevator was available for transporting the material, most of which was handled by pallets and moved by fork lifts or hand dollies.

It was soon evident that the freight elevator could not handle the traffic required to provide the second floor with all the material needed. The trim of the car consists of installing the rubber molding on all window openings, the windows, some electrical interior wiring, some chrome stripping, and all of the interior door panels and the roof headliners.

With Plymouth, Dodge, DeSoto, and Chrysler cars all being built, considerable variation in windows and trim resulted in a stock handling problem. Under the direction of Otto A. Egeler, plant engineer, designs of a vertical endless type pallet conveyor were requested.

This conveyor was to have capabilities for handling a pallet loading of 2,200 lb. each. It was to be designed to permit the return of empty cartons and pallets from the second floor and to permit hand unloading.

The contract for the pallet elevator was awarded to the Jervis B. Webb Co. of Los Angeles. Electrical controls were installed by the Chrysler main-

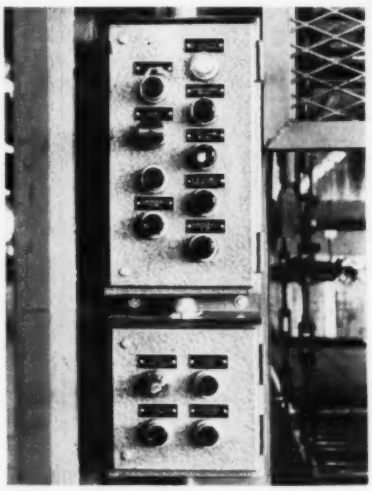
tenance department. Many safety features were included to insure safe operation.

The pallet elevator has two main sprockets, the lower one submerged in a 9-ft.-deep pit and the upper one mounted on a superstructure 11 ft. above the second floor. Ten trays of rollers 50x76 in. are mounted on the chain.

At the end of each tray is a stop plate, actuated by a cam that lowers to a level position when the tray is level with the loading or unloading roller conveyors. This plate, by means of a counterbalance, raises to a vertical position when the conveyor moves and prevents the possibility of a load rolling off the tray while in motion.

A similar device was installed on the loading roller conveyors to prevent any material from rolling onto the pallet elevator while it was in motion.

To prevent the possibility of any material being lifted over the top of the pallet elevator or being dropped into the pit on the return side, a system of photoelectric eyes was installed that would prevent operation of the conveyor if any obstruction, such as a pallet, tub, or box, was on the tray.



SINCE loading and unloading conditions vary on the floors, start buttons must be pushed at both stations to use elevator.

A two-speed drive system is used. The conveyor is powered by a 10-hp. fluid drive electric motor. Coupled to the drive shaft, also, is a 1-hp. motor geared to the drive shaft through an electric clutch. A push on the start button putting the conveyor into operation starts the larger motor.

As the pallet tray indexes upward a distance of 8 ft. 2 in., the top tray triggers a limit switch approximately 6 in. before stop level. This de-energizes the large motor and through a time delay switch energizes the small



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motor and electric clutch. This is done to slow down the elevator from a high indexing speed to a slow inching speed that will bring it to a smooth and accurate stop. A second limit switch stops the small motor and energizes a brake.

A series of signal lights are located on both floors to show the condition of the pallet conveyor. The electrical system installed is automatic except for its starting. Since loading and unloading conditions vary on both floors, it is designed so that both stations, upper and lower, must push the start buttons to start the conveyor.

A green light at either control box signals that the other floor is ready. The second button must be pushed to complete the circuit. A red light signals that the elevator is in operation and a purple light indicates when a pallet is on the elevator waiting to be unloaded.

The loaded pallets on the first floor are placed on a gravity roller conveyor feeding the elevator by a fork lift. Each tray is loaded as it indexes upwards. Upon arriving at the top level, it is pulled out onto a 30-ft. gravity roller conveyor and rolls to the end, where it is picked up and taken to its proper location.

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THREE completely motorized cranes operate on tracks supported from overhead wood trusses.

AT Woodbury Hardware Co., Portland, Ore., materials can be moved from any point on a mezzanine storage area to any area in the open warehouse room directly without rehandling the loads.

Three 3-ton, 63-ft.-long Cleveland Tramrail cranes on parallel three-track runways provide this direct movement.

All three cranes can be interlocked with spur tracks so that a hoist carrier with a load can travel from one crane onto the second and third cranes.



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QUESTIONS ANSWERED for supervisors by top management panel

ONCE EACH YEAR top management officials of Public Service Co. of Colorado serve as a panel group to answer any and all questions asked by company supervision, including technical and professional employees.

This meeting is one of the most popular of the company's regular voluntary monthly supervisory meetings held in the evenings on the third Tuesday of each month.

No punches are pulled; questions are solicited for a month preceding the meeting and may be submitted written and unsigned, or asked from the floor at the meeting. This provides a "grass roots" survey of existing problems or misinformation without any chance of injury to an individual and reveals inter-company communications needs along with clarification of existing operating policies.

Approximately 200 employees participate in this annual program which gives supervision an opportunity to ask top management's opinion on every type of personal and operating problem imaginable. Company officials meet this challenge by being frank and outspoken in their answers.

Questions on specific company problems deal with employee relations, job evaluations, internal communications, wages, supervisory development, retirement program, operating policies, etc.

In addition to the type of questions mentioned, general questions on employee discounts, naming of Public Service Co. power plants, the business outlook for the company, financing program of new power plants and management's thinking on national issues affecting the electric and natural gas industries are answered by the panel.

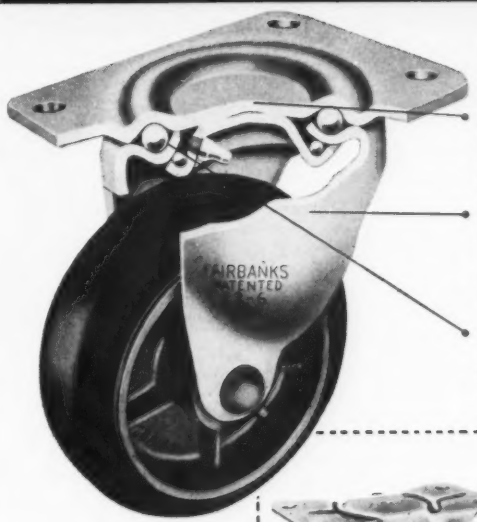
Create better understanding

While some questions are very bluntly phrased and are visibly the result of a personal problem, all are answered. John E. Loiseau, president of the firm said, "These questions contribute to a better understanding and working relationship and as this group represents management at all levels, they have the right and need to know the answer to any question that is bothering them on their job. This meeting typifies real two-way communication, and we expect our supervisors to be just as frank and vocal with their employees."

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Fairbanks Series "23" double ball race swivel casters, for medium duty, sizes 3" to 8".

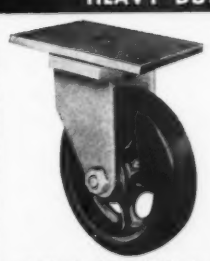


Fairbanks Series "33" rigid casters, match Series "23" casters in height, sizes 3" to 8".



Fairbanks Series "21" single ball race swivel casters, for regular duty, sizes 2" to 6". Matching rigid Series "31" casters available.

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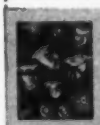
Fairbanks Series "27" double race swivel casters, for heavy duty, sizes 6", 8" and 10".



Fairbanks Series "37" rigid casters match the Series "27" casters in height, sizes 6", 8" and 10"



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Materials handling saves money . . .

How to select, use, and care for pallets

. . . will be top subject of West Coast pallet conferences



By WILLIAM H. SARDO, JR.
Secretary-Manager
National Wooden Pallet Manufacturers Assoc.

AT least two pallet conferences will be held on the West Coast in September or October of this year by the National Wooden Pallet Manufacturers Assoc. Full details will be announced soon, but the economics of pallets as affected by freight charges and rules, selection and purchasing, and maintenance can be foreseen as three major topics of discussion.

New freight concept

The new "throughout" concept in pallet loading has become possible in recent months due to concessions granted by truck and rail carriers. Unit loading by palletization is being employed for the handling of raw materials to the factory, for all intermediate phases of manufacturing and warehousing, and for shipping and distribution to ultimate destination.

Carriers now accept shipments loaded on pallets by charging freight only on the commodity and its shipping containers. The weight of the pallets is deducted from the gross weight of the shipment in determining freight charges. Some carriers have even gone further in granting either free or low-rate concessions on the return of empty pallets to the point of origin.

These new shipping rules affecting palletization are of particular importance to Western industry. The cost of relatively long hauls to markets will be greatly reduced.

Many truck carriers in the West, East, and the Central states have granted concessions encouraging palletized shipping. So far, rail concessions along these lines have been restricted to Eastern territory. However, railroads in most freight territories are considering similar proposals.

Manufacturers located in the Western states can bring about similar advantages for their area by writing in support of Trans-Continental Freight

How to order pallets

IN ordering pallets, purchasers often fail to supply all the necessary technical data required to obtain the desired pallet. These factors should be included in your order:

- √ **Size of pallet (length and width; always designate length first).**
- √ **Type of pallet desired.**
- √ **Design of pallet desired.**
- √ **Lumber species permitted.**
- √ **Minimum dimensions of deckboards and stringers or blocks.**
- √ **Moisture content or NWPMA pallet grade.**
- √ **Maximum and minimum individual and total spacing between top and bottom deckboards.**
- √ **Number and position of stringers or blocks.**
- √ **Chamfering, if required.**
- √ **Type, designation, and number of fastenings.**
- √ **Pre-drilling, if required.**
- √ **Wood preservatives, if required.**

Bureau Application No. C-2307 to Chairman M. F. Edbrooke, of the Trans-Continental Freight Bureau, Union Station, Chicago 6, Ill.

Pallet selection

The matter of pallet specifications seems to be the least understood of all the technical considerations involved in the use of pallets. Many costly mistakes in selecting the right pallet for a given job may be avoided if a user or potential purchaser would refer to the minimum standard specifications for warehouse pallets published by the National Wooden Pallet Manufacturers Assoc.

These specifications spell out in detail the various minimum requirements for the construction of wooden pallets. The list may be obtained without charge from most reputable pallet manufacturers, or through the Association offices at 215 Barr Bldg., Washington 6, D. C.

Pallet purchasers should insist that each pallet be branded or stenciled with the supplier's name, or mill designation or brand. This procedure makes it possible at any time to identify individual pallet performance, and the source of supply.

The National Wooden Pallet Manufacturers Assoc. has taken steps to simplify this procedure by adopting two pallet grades, namely "A" and "AA". The requirements of these grades are covered in the NWPMA minimum standard specifications mentioned previously in this article.

Present and potential users of pallets would do well to have in their files an additional reference publication on pallets. The Technical Handbook on Pallets and Palletization, published by the National Wooden Pallet Manufacturers Assoc., is another helpful reference for pallet users. It contains information on everything from how to plan for palletization to the proper use and maintenance of pallets. Most reputable pallet suppliers provide copies of the handbook to users at no cost or it may be obtained from the NWPMA at a cost of $1.

The wrong way

Many times, pallet users pursue policies that in themselves encourage the purchase of a pallet of poor construction and material. These are briefly:

1. Issuing specifications which are lacking in complete detail, and which open up the bidding to manufacturers of inferior quality pallets that have short-use life.

2. Accepting on delivery pallets which do not meet the issued specifica-



. . . for more details circle No. 64 on Reader Service Postcard
See Directory listing page 107, Yellow Section

tions, thus encouraging the pallet supplier to continue such practices in the future.

3. Accepting pallets without brand or stencil identification of the manufacturer, which makes it impossible to determine their source after they have been in use for a year or more.

4. Improper care of pallets after they are put into use.

Pallet care

Like any other type of materials handling equipment, wooden pallets give a maximum, trouble-free service life when not abused. If properly designed and constructed to perform under specific conditions, wooden pallets offer more real advantages to users than any other kind.

Although some pallet damage is unavoidable, many pallets are damaged because of carelessness on the part of personnel engaged in pallet handling. Fork truck operators can cause great damage to pallets by pursuing any one of the three following practices:

1. Operators are sometimes careless in entering or withdrawing from pallet openings with tilted forks, which rip off or break the outside edges of end deckboards. This practice can be prevented by placing a level or leveling mark on the mast of all fork lift trucks. A device known as the "Level-O-Meter" has been scientifically designed for such purpose and is now available from pallet suppliers.

2. Operators cause extensive damage to pallets by striking the stringers or blocks with the forks. Care in entering and withdrawing from pallets can also prevent this hazard.

3. Operators attempt to slue pallets around with one fork in order to line them up for direct two-fork entry. This action can destroy the corner of the pallet and bring on early failure.

Another instance of careless pallet handling is the removal of the top pallet in a pile by simply sliding it off and allowing it to fall to the ground. This practice can weaken the pallet because it tends to loosen the fastenings, and can also cause damage to the deckboards.

Repair program

Neglect of pallets after they are in use can be one of the most costly practices encountered in materials handling. Since wooden pallets are economically and readily repairable, a reasonable pallet maintenance program is not complicated and will pay dividends when put into practice.

Such a pallet repair program should stress preventive maintenance as well as correct repair procedures. The following rules should be adhered to:

1. Determine the amount of repair which can be economically done to a damaged pallet. A rule of thumb to follow is to never repair a pallet that requires complete dismantling and reassembly of pallet parts, or whose cost of repair exceeds the acquisition cost of a new pallet.

2. Assign one person the responsibility of deciding when to repair and when to replace pallets.

3. Use semi-skilled workers for this job, and assign the same crew each time for repair work when needed.

4. Provide an adequate working area, proper tools, fastenings, and precut deckboards, blocks, or stringers.

5. Salvage components of pallets damaged beyond repair whenever possible.

Meet a traveling salesman who rarely travels

Without a sales force of any kind—other than himself—Ernie Pate (above) sells seed beans to packagers all over the country. Yet he seldom makes a business trip outside of Ventura, Calif., his home base. Mr. Pate does most of his selling by telephone. He says: "Nearly every one of the three million pounds of seed beans I sell each year is contracted for by long distance. It quickly puts me in personal touch with buyers from coast to coast. Brings me lots of valuable market information, too." Cost to Mr. Pate: far less than it'd take to hire a sales force for the same job.

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LUMBER INDUSTRY improvements suggested

ARCHITECT Oswald Berg of Bozeman, Mont., suggested seven fields where he felt improvements would help the lumber industry meet the needs of contemporary architecture. These are his suggestions as he presented them to a panel on "What we expect from lumber" at the Northwest Wood Products Clinic held in Spokane, Wash., in April:

1. Development of prefinished insulation panel with a built-in vapor barrier in 4 x 8 or 8 x 8 ft. sizes.
2. Development of a natural finish for exterior wood use which would bring out the inherent beauty of woods, yet protect it from weathering.
3. Coating kiln dried material to keep it from absorbing moisture in transit and in use.
4. Development of greater stability in wood to obviate, or at least greatly reduce, shrinkage and swelling, a characteristic which would be practically overcome if point three were observed.
5. Maintenance of a greater stability of lumber grades and quality within grades.
6. Establishment of a better industry-public relation with wood products sold at an industry, rather than at individual company, level. This would materially increase lumber markets.
7. Change existing insurance regulations by aggressively demonstrating to legislators the obsolescence of present methods of rating, particularly in schools. The present rate in Montana of .1 for stone and .4 for wood imposes an inequity on wood products which is not substantiated by loss figures and which does not take modern design into consideration.

Mr. Berg told of a million dollar high school which could be built at a saving of $90,000 if constructed of wood. However, he explained, due to high insurance rates favoring brick and stone, the school board will probably turn to these materials.

In line with these comments, Charles Young of Weyerhaeuser Timber Co. stated, "The answer will lie in better finishing, more attention to customer's desires, and improving the industry's manufacturing approach as well as its sales attitude."

Young said, "It is not enough to think that the research efforts of scattered companies will have a marked effect on over-all markets. Competing industries also have research programs based on a greater percentage of sales dollar than does lumber."



DARNELL

● Darnell Casters and Wheels are provided with both rubber-tired wheels as well as semi-steel wheels for satisfactorily meeting any floor condition.

● There are many adaptations provided for attaching Darnell Casters to most any type of equipment such as angle fittings, threaded stems, pipe stems, etc.



FREE BOOK

Here's a book that should be in your files. Describes over 4000 types of Darnell precision engineered casters and wheels. Its detailed completeness enables you to specify the exact model to fit your individual needs, to meet all floor, equipment and load conditions with various top plates, stems, special fittings and rubber or steel tread wheels. 192 pages of helpful information that assures savings

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60 WALKER STREET, NEW YORK 13, NEW YORK
36 NORTH CLINTON STREET, CHICAGO 6, ILLINOIS

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See Directory listing page 107, Yellow Section

PROFIT FROM WASTE
by risky investment

THE PURCHASE of a truck and trailer combination designed to haul sulphuric acid is considered a risky investment in the trucking industry, because of its relatively limited use. But, in order to further diversify their bulk liquid hauling facilities, System Tank Lines, a subsidiary of Pacific Intermountain Express, Oakland, Calif., recently acquired such a unit.

Sulphuric gases were escaping at a Northern Idaho silver mine and had killed off large areas of nearby vegetation. A recovery plant was built and the spent sulphur was made usable. A market for the acid existed in Southern Idaho at a copper mine and eventually the two mines completed the arrangement.

Receipt of the acid at the copper mine previously depended upon service from Salt Lake City, which proved to be an uncertain source of supply. Now, System's new unit delivers the acid regularly.

Although investment in new equipment was required to handle this hauling job on a more dependable basis, added revenue from a new source was obtained. In spite of the empty return problem, a profit is being made for the shipper and the carrier from what was previously a waste product of the silver mine.



LOADER checks input of sulphuric acid being loaded in corrosion-protected tank truck.

Movement of diversified products has established the versatility of the company's regular bulk equipment. A stainless steel tanker, meticulously cleaned to meet pure food law requirements, has hauled fresh cherries in brine. In another move a truck has helped a wood pulp plant dispose of lignin liquor, a waste product.

Other varied hauls included tallow, commercial fertilizer, molasses, wood preservative, synthetic paint thinner, and fresh peas in water.

CUT LOAD HANDLING COSTS WITH TUG-BAR



One man with Tug-Bar can do the work of several, move 2-ton loads and put them where they're wanted quickly and easily! Load lips available for any loading requirement. Tug-Bar weighs only 110 lbs. Standard units available in 110V AC or 24V DC. Manufactured by Western Gear, one of the nation's foremost designers and manufacturers of mechanical power transmission equipment.

For information on how Tug-Bar saves time and money in load handling, address Executive Offices, Western Gear, P. O. Box 182, Lynwood, California.

"The difference is reliability" ★ Since 1888

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PLANTS AT LYNWOOD, PASADENA, BELMONT, SAN FRANCISCO (CALIFORNIA), SEATTLE AND HOUSTON . . . REPRESENTATIVES IN PRINCIPAL CITIES

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PROGRESS REPORT:

Piggy-back and trainship transportation

TRANSPORTING goods by the "piggy-back" or trailer-flatcar system was introduced to the West by Southern Pacific Co. in 1953. Since then, that road and several other railroads in the West have developed the system to an efficient shipping service. Recent development of the trainship for transporting loaded freight cars by steamer is another step in unitized load shipping. Here's what has taken place during the past year.

Southern Pacific

This company's initial "piggy-back" service was from San Francisco to Los Angeles and from Texas to Louisiana. Then the service was extended to include service from Los Angeles to Phoenix, Ariz. During the past year it has been expanded as follows:

1. Service area of the San Francisco Bay Area to Los Angeles has been extended to include the entire Los Angeles Basin, and the rates have been made available via Southern Pacific's San Joaquin Valley line as well as the Coastal route.

2. Service has been offered between Stockton-Sacramento areas and the Los Angeles Basin via the San Joaquin Valley.

3. Service was begun between San Francisco Bay Area points and Sacramento, Stockton, points in Nevada, Idaho, Utah, eastern Oregon, and western Wyoming. Service beyond Southern Pacific facilities is under joint rate and equipment is interchangeable with the Union Pacific railroad.

4. Service between California, Oregon, and Washington points, to and including Seattle, has started with the cooperation of the Northern Pacific, Union Pacific, and Great Northern lines. Arrangements are now being made to extend the service to eastern points in Oregon and Spokane, Wash.

5. Service from California points on the Southern Pacific line and Yreka, Calif., has commenced with the cooperation of the Yreka Western Railroad Co.

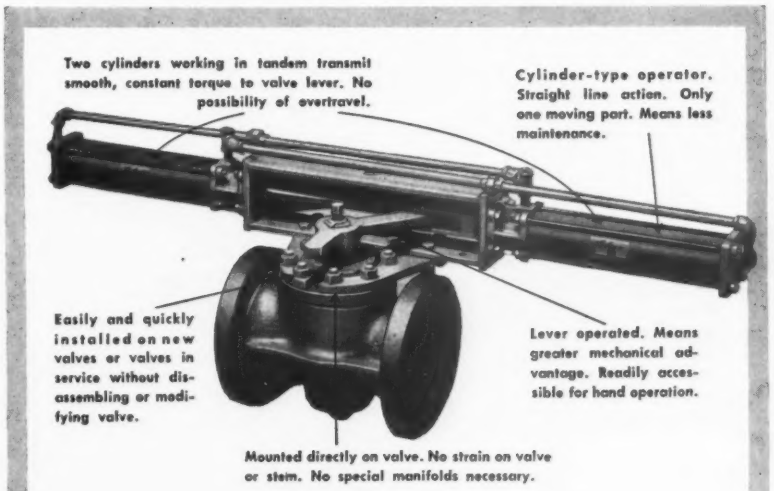
6. Service between California and Arizona points is being expanded to include carload traffic.

Pick-up and delivery service is performed by Southern Pacific's wholly owned subsidiary, Pacific Motor Trucking Co. Semi-trailers are dispatched to the shipper's plant. After loading, they are driven to the end-loading ramps and backed onto flatcars equipped with special tie-down devices.

When all the flatcars have been loaded, they are placed in the fast merchandise train. On arrival, the trucks are unloaded and driven to the consignee's plant where the goods are unloaded.

Southern Pacific uses 53 ft. 6 in. flatcars, equipped with steel wheels and ride control trucks for safe movement. The tie-down gear consists of

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Ledeen VALVE ACTUATORS

Ledeen Valve Actuators have no rotating motors, gears, bearings, clutches or other fast-moving parts. They are straight-line, cylinder-type operators — simple, highly efficient and easy to control. Operated by high or low pressure, air, gas, oil or water. Suitable for automatic safety shut-off installations, blow-downs, instrument control and numerous other proved applications.



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Los Angeles 15, Cal.

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ELPAR

"Air-Rights" fork trucks

Why scatter your loads over costly floor space leaving a vacuum overhead? E-P fork trucks will high-tier them so you can profitably use all overhead space.

There are 8 models in the E-P "Air-Rights" series, in increments of 1,000 lbs. between 2,000 and 10,000 lbs. Electrically powered, they give dependable operation for pennies per day. All parts are quickly accessible for fast, preventive maintenance. Their design features compactness and easy steering.

For further information write Ira G. Perin, 575 Howard St., Dept. W. San Francisco 5, Calif.

West Coast Representative

IRA G. PERIN CO.

San Francisco • Los Angeles

. . . for more details circle No. 70
See listing page 109, Yellow Section



TRAILERS are backed onto flat cars from loading platforms in piggy-back transportation.

side rails to guide the trailers while being backed on or driven off the cars. front stanchions upon which the forward end of the trailer rests, a number of ratchet type binders by which the cables are fastened to the trailers to hold them tight against the flatcar, portable wheel blocks fastened front and behind the trailer tires, and movable floor plates at the ends of the cars.

When in down position the floor plates provide a continuous runway between cars for loading or unloading trailers at the end ramp.

Great Northern

In February of this year, Great Northern entered piggy-back operations in the West through a tariff agreement with the Southern Pacific line. The agreement provides for interchange at Portland, Ore., with service between Seattle-Tacoma area, Port-



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CRANES AND HOISTS

In the handling of heavy materials, cranes and hoists play an extremely important part. Whether this equipment is standard or special it must give dependable performance at all times. CraneVeyor equipment is recognized by industry for exceptional quality and maximum efficiency. This recognition is attested by the fact that a majority of important installations carry the CraneVeyor nameplate. Years of experience and expert know-how are available at CraneVeyor. You will find it worth while to discuss your crane and hoist problems with us.

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CRANEVEYOR CORP.

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land, San Francisco Bay Area, and Los Angeles.

Tariffs for a similar service locally between Seattle, Tacoma, and Portland became effective in March 1955. Tariffs for an alternate "piggy-back" service between the Pacific Northwest and Southern California points via Great Northern's central Oregon route have been established also.

To handle the new operations, Great Northern leased ten 24-ft., non-insulated trailer units and converted twenty 53-ft. 6-in. flatcars. Pick-up and delivery service at Seattle, Tacoma, and Portland has been provided with independent drayage firms.

Santa Fe

Santa Fe now provides service between Los Angeles and San Diego, and between Southern California and San Joaquin Valley, on the one hand, and Portland, West Linn, Ore., Tacoma, Seattle, Everett, and Camas, on the other hand. California also has been linked up with Arizona, New Mexico, and El Paso.

Both van type and stake body trailers are used, loading and unloading with end-type ramps. Tie-down is accomplished with chains equipped with binders of spring loaded ratchet type.

Joint operation

The Western Pacific line, in conjunction with the Great Northern and Santa Fe line, is participating in a joint piggy-back service between California and the Pacific Northwest. Trailer and flatcar equipment is completely interchangeable and is pooled between the three carriers.

Tie-down arrangements here consist of wheel blocks for each trailer wheel, an adjustable support at the front end of each rail car (a type of screw jack), and cables or chains to secure the entire trailer body to the flatcar.

On ships

Alaska Steamship Co. has applied the same principle to transport truckloads of goods. The trailers are lifted aboard ship by crane, however. Present service consists of trips from Seattle, Wash., to Valdez, Alaska, and then to Fairbanks, Alaska, via the Richardson highway, and from Seattle to Anchorage via the Seward Gateway.

The highway portion of these hauls is provided by Garrison Fast Freight, Inc.

One step further in the unitized load shipping program is the recent thinking toward trainships.

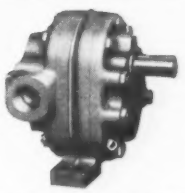
The ships are proposed for operation between Seattle and the Alaska railbelt.

GOT A PUMPING PROBLEM?

PERHAPS THE ANSWER YOU'RE LOOKING FOR IS A ROPER ROTARY PUMP

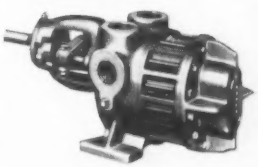
ROPER PUMP-MOTORS

These units offer low-speed and high-torque, and their versatility finds them well-suited to heavy-duty service within their operating range. In general, recommended speed is 200 to 800 R.P.M. with pressures to 800 P.S.I. In this range, they require from 7 to 40 G.P.M. flow and will develop up to 11.5 H.P. output at maximum speed and pressure.



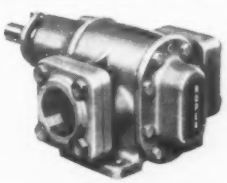
ROPER SERIES F PUMPS

Among the dependable Ropers is the Series F Pump — pressures to 300 P.S.I., sizes 1 to 300 G.P.M. It features four-port design with 8 optional piping arrangements . . . supplied in standard fitted models. With packed box or mechanical seal; with or without relief valve.



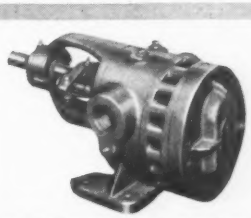
ROPER SERIES K PUMPS

Operate your hydraulic circuit with the correct size Roper for the particular job. In many cases the Series K will do, for it is rated from pressures to 150 P.S.I., capacities ¾ to 50 G.P.M. This model is compact, sturdy . . . is self-lubricated by liquid pumped. Comes with packed box or mechanical seal . . . with or without relief valve.



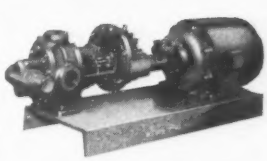
ROPER SERIES H PUMPS

Lower maintenance costs with a Roper. For instance, a pump like the Series H with pressures to 1000 P.S.I., sizes 10 to 75 G.P.M. is ideally suited for hydraulic mechanisms and for other applications requiring high pressures. Spur gears run in axial hydraulic balance . . . roller bearings and bronze wear plates reduce friction. Available with packed box or mechanical seal.



ROPER SERIES 3600 PUMPS

You'll profit more with dependable Roper Series 3600 Pumps on the job . . . they are speedy, quiet, and plenty rugged. Service-proved features such as self-lubrication, adjustable relief valve, hardened gears, and mechanical seal contribute to Roper dependability. Sizes range from 40 to 300 G.P.M.; pressures to 60 P.S.I.



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ROPER Rotary Pumps

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NEW OFFICERS, Los Angeles AMHS chapter: James P. Kinney, conference chairman; Milton Canfield, sec.; Wm. G. Goninan, vice-ch.; J. M. Druliner, chairman; J. Alden Lane, treas.; Ed Sullivan, public relations ch.; Robert S. Phoenix, membership chairman and director-manager of Western Material Handling Conference and Equipment Show, May 9-11, 1956.

West's exclusive M-H show

THE West will have it first exclusive materials handling show and conference in Los Angeles May 9-11 next year.

It is sponsored by the Los Angeles chapter of the American Material Handling Society, with the approval of the national organization. It also has the support of the newly organized National Material Handling Equipment Distributors Assoc., headed by Robert H. Braun of Los Angeles.

The event will be held in the recently completed Western Livestock Exhibition Auditorium, at the junction of the Santa Ana Freeway with Atlantic and Eastern avenues. The pavilion has 80,000 sq. ft. of floor space, approximately the same size as Pan-Pacific Auditorium. Air in the building is changed every eight minutes, thus permitting indoor operation of fork trucks.

One-third of the exhibit space already has been taken by local distributors and manufacturers in the Los Angeles metropolitan area. Robert S. Phoenix, of Equipment Engineering Services, 672 S. Lafayette Park, Los Angeles, has been appointed full-time manager-director of the conference and exhibition.

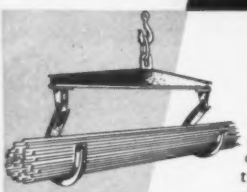
Many innovations are planned, including a "lift truck roadeo" to attract both materials handling engineers and representatives of management.

Materials handling has always been combined with packaging in the conferences and shows held on the West Coast in the past, and the materials handling people have felt that they were the tail of the dog.

J. M. Druliner, chief industrial engineer of Norris-Thermador Co. and chairman of the Los Angeles chapter of the American Material Handling Society, places particular emphasis on the conference. He announces that it is the intent of the Los Angeles chapter to sell the "know-how" of materials handling first, backing it up with the manufacturers and distributors exhibits.

DOWNS SAFETY GRABS

...GRIP ANYTHING!

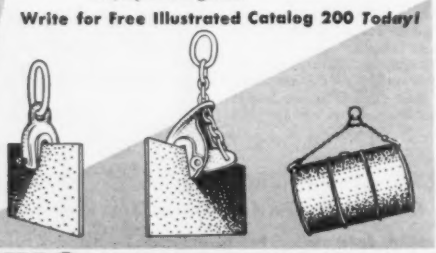


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Material lifting equipment will do more work—faster, easier—when you have the proper "grabs" for every type of load. No matter what your hoists are handling—pipe, rails, drums, plate or structural steel, stone, timber, boxes or odd-shaped objects of any description—there's a DOWNS *Safety* Grab that will enable you to do it faster, easier *and* safer. Learn new short cuts to greater efficiency for YOUR plant with DOWNS' *complete line* of *Safety* hoist grabs!

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MECHANICAL ENGINEERS

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CLAY	COCOA	CARBON	ABRASIVE
COAL	CORK	CEMENT	ASBESTOS
FEED	FLOUR	CERAMIC	CHEMICAL
LIME	METAL	ENAMEL	FERTILIZER
ROCK	PAPER	FOUNDRY	LEATHER
SLATE	RUBBER	GRANITE	PLASTIC
SOAP	SILICA	GYPSUM	PORCELAIN
TALC	WOOD	PIGMENT	TOBACCO

REES BLOW PIPE MANUFACTURING CO., INC.

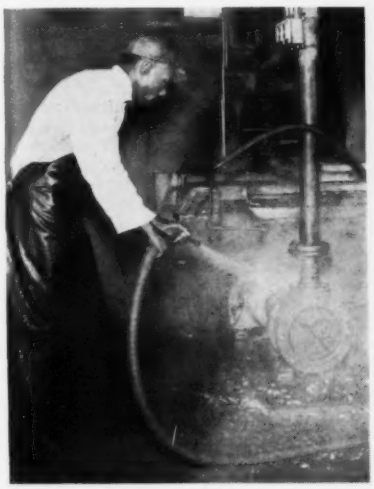
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MOTORS SEALED from wash-down damage



HOSING down motors with water at 180 deg.

CLEANING OF equipment daily with 180-deg. water blasted at 250-lb. pressure is a necessary maintenance function at Coast Packing Co., Vernon, Calif., but it was taking its toll of electrical equipment.

Damage from the heat, dampness, and force was causing motor breakdown on an average of twice a month.

Problem solved

The costly maintenance and work stoppage has been greatly reduced through processing of the most exposed motors in the plant with a chemical compound, Safe-T-Seal, by Larsen-Hogue Electric Co., Los Angeles.

Breakdowns due to insulation failures have become a rarity and many of the motors have operated six years without insulation failure trouble.

GUIDANCE for small business

SEVERAL INNOVATIONS, including expansion of the office of the Small Business Specialist, have been made at the San Francisco Ordnance District.

Newly expanded office maintains a complete listing of invitations for bids of items being procured by ordnance arsenals, centers, and depots in the United States.

A sample display, consisting of defense items which have been made or are capable of being manufactured by industrial firms on the West Coast, is available for review.

Put a layer of

STEEL

under *every job* in your plant!



Production zooms ahead... overhead drops ...when Trojan Corrugated Boxes and Skids take over!

Fast, safe, material handling cuts *down time*, speeds work flow. Trojan steel Corrugated Boxes and Skids reduce waste, damage and losses. You'll get double life from your plant equipment if you let *steel* do the job. But be sure you specify rugged Trojan steel Skids and Corrugated Boxes. Here's why:

Trojan Skids are formed from 10-gauge steel, available with or without steel floor runners. Corrugated 12-gauge steel Boxes have a double-thick, rolled flange around the top for extra strength. Lugs are welded to the outer rim for easier tiering or lifting. Boxes are available welded direct to steel Skids, or removable, as desired.

Trojan custom makes all types of industrial material handling Skids and Corrugated Boxes to meet individual requirements. There's a Trojan answer to your material handling problem. Start cutting your overhead now—call Trojan!

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AUTO SHEET METAL WORKS

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See Directory listing page 103, Yellow Section

National instrument show in Los Angeles

Exhibition and conference are a tribute to the West's importance in instrumentation

STILL another instance of the West's growing industrial importance is the Instrument Society of America's tenth annual Instrument-Automation Conference and Exhibit in Los Angeles, September 12-16, the first time it has been held on the West Coast.

So rapidly has the instrument industry been moving ahead that a great deal of the equipment exhibited will be shown for the first time. Shrine Exposition Hall has been sold out, with 462 exhibitors as of June 24, and arrangements have been made for a tent annex.

The program includes a 9-section analytical clinic and for the first time a computer workshop and a data handling symposium. A maintenance clinic will be held at USC on September 9-12, covering 24 subjects, and the material will be presented by men from the training departments of various factories.

More than 10,000 scientists and engineers from the United States and foreign countries will be in attendance, according to Dr. A. O. Beckman, president of Beckman Instruments, Inc., Los Angeles, and chairman of the conference.

He said the choice of Los Angeles is recognition of the importance of Southern California as a center of research and development in instrumentation. The concentration of outstanding scientific and engineering talent responsible for computers, guided missile control, data handling equipment, and the many tools of automation makes the area an ideal location for a meeting of such national importance, he stated.

Robert L. Galley of North American Aviation is exhibit chairman and A. A. Anderson of Swissomatic Products, Santa Monica, is vice chairman of the Los Angeles host committee.

Early list of exhibitors is given below.

Exhibitors

A

Abbott Instrument & Eng. Co.
Abrams Instrument Corp.
Acro Manufacturing Co.
Allegany Instrument Co.
American Cystoscope Makers, Inc.
American Helicopter (Div. of Fairchild Engine & Airplane Corp.)
American Institute of Electrical Engineers
American Institute of Physics
American Instruments Co.
American Laubacher Co.
American Meter Co.
American Phenolic Corp.
American Recording Chart Co.
American Society of Mechanical Engineers
Ampex Corporation
Analytical Measurements, Inc.
Anders-Lykens Corporation
H. Reeve Angel & Co., Inc.
The Annin Company
Applied Research Labs.
Askania Regulator Co.
Assembly Products, Inc.

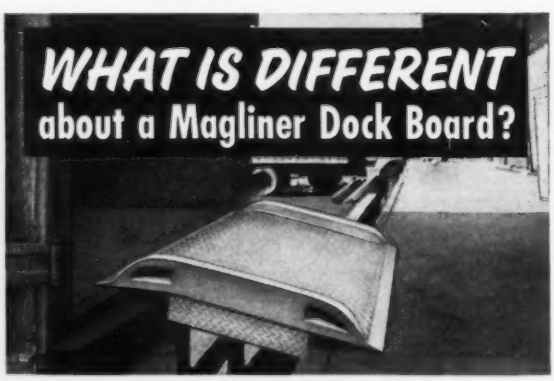


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and
99.99%
PURE ARGON

INDUSTRIAL AIR PRODUCTS CO.

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High-Volume, Lower-Cost Loading: Magliners get more out of power trucks, floor trucks and other equipment . . . give you faster loading cycles . . . more loads moved in less time!

Light, Strong, Safe: Made of magnesium for increased strength, greater safety to men, loads and equipment, easy one-man handling!

Lower Dock Board Cost: Both in initial cost and over the long haul too! Initial cost savings range up to 70%—long run savings give even greater economy!

Magliner dock boards *are* different! Find out how they can make a big difference in your shipping-receiving costs! Write today for Bulletin DB-204.

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In Canada: Magline of Canada, Ltd., Renfrew, Ontario

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Associated Research, Inc.
Automatic Electric Sales Corp.
Automatic Switch Co.
Automatic Temperature Control Co., Inc.
A-V Manufacturing Corp.

B

Bailey Meter Co.
Baker Company
Barber-Colman Company
(Wheelco Instruments Div.)
Barksdale-Meletron
Barton Instrument Co.
Beckman Instruments, Inc.
Arnold O. Beckman, Inc.
Beckman & Whitley Inc.
Bendix Aviation Corp.
Benson-Lehner Corp.
James G. Biddle Co.
B-I-F Industries, Inc.
J. Bishop & Co., Platinum Works
Black,Sivalls & Bryson, Inc.
Bourns Laboratories Instrument Sales Corp.
Brailsford & Co., Inc.
The Bristol Company
Brooks Rotameter Co.
Brush Electronics Co.
Buffalo Meter Co.
Burgess Battery Co.
Burgess-Manning Co.
(Electronic Instruments Div.)
Burroughs Corp.
Electronics Instrument Div.
Burroughs Corp.
Research Center
Burton Manufacturing Co.
Byron-Jackson Co.

C

Angus Campbell Corp.
J. A. Campbell Co.
CEC Instruments, Inc.
Central Scientific Co.
Century Geophysical Corp.
Chemiquip Co.
Cinema Engineering Co.
Coleman Engineering Co., Inc.
Commercial Iron Works
Commercial Research Laboratories, Inc.
Earl S. Condon Co.
Conoflow Corporation
Conrad Spring Company
Consolidated Engineering Corp., Inc.
(CEC Instruments)
Continental Equipment Co.
Control Engineering
McGraw Hill Publishing Co.
Control Engineering Corp.
Control Products, Inc.
R. W. Cramer Co., Inc.
Crawford Fitting Co.
Crescent Engineering
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D

George W. Dahl Co.
Daniel Orifice Fitting Co.
The Daven Company
Davidson Mfg. Co.
Joe Davidson & Associates
The Davies Laboratories, Inc.
Daystrom Instruments
Detectron Corporation
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Detroit Controls Corp.
The Deutsch Company
DeZurik Shower Co.
Wilbur B. Driver Co.
Driver-Harris Company
E. I. du Pont de Nemours & Co., Inc.
Durant Mfg. Co.

E

Eagle Signal Corp.
Eastman Kodak Co.
Edin Co., Inc.
Thomas A. Edison Co.
Electric Auto-Lite Co.
ElectroData Corp.
Electromec, Inc.
Electronic Associates, Inc.
Electronic Tube Corp.
Elgin Metalformers Corp.
Encyclopaedia Britannica
Endevco Corporation
Esterline-Angus Co., Inc.

F

Farnsworth Electronics
Farris Engineering Corp.
J. W. Fecker, Inc.
Federal Tele. & Radio Co.
Felts Corporation
(Microdot Division)
Fenwal, Inc.
Filters, Inc.
Fischer & Porter Co.
Fisher Governor Co.
Flexonics Corp.
The Fluor Corp., Ltd.
Foster Engineering Co.
The Foxboro Co.

G

R. P. Gallien & Son
General Controls Co.
General Electric Co.
General Instruments
General Precision Equipment Co.
General Precision Laboratories, Inc.
General Radio Co.

. . . More on page 98.

THE MOST COMPLETE LINE OF POWERED MATERIALS HANDLING EQUIPMENT



World Famous COLES CRANES Complete line to fill every need.



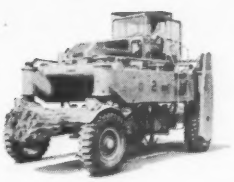
CLARK Tilting Fork Stacker (Capacities from 1,500 to to 3,000 lbs.)



CLARK "Clarkette" Tractors



CLARK Fork Lift Trucks (1,000 to 26,000 lbs. capacity)



ROSS Straddle Carriers (Capacities up to 50,000 lbs.)



CLARK Tractors (Drawbar rating up to 12,000 lbs.)

CLARK MATERIALS HANDLING EQUIPMENT
ROSS CARRIERS
AUTHORIZED SALES AND SERVICE

ROBERT H. BRAUN COMPANY
Material handling equipment
BRAUN HANDLING METHODS

5519 JILLSON ST. LOS ANGELES 22, CALIFORNIA RAYMOND 3-6381

FRESNO, CALIFORNIA 1905 MARY ST. Fresno 6-0169
SAN DIEGO, CALIFORNIA 2208 IMPERIAL AVE. BEImont 3-0948
PHOENIX, ARIZONA 2308 SO. 11th AVE. ALpine 8-8951

LEASE OR BUY ON EASY TERMS

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NATIONAL INSTRUMENT SHOW

Genisco, Inc.
G. M. Giannini & Co., Inc.
The Goldak Company
Goodyear Aircraft Corp.
Claude S. Gordon Co.
Gow-Mac Instrument Co.
(G. H. Vaughan Co.)
Gulton Mfg. Co.
W. & L. E. Gurley
Gyromechanisms, Inc.

H

Hallikainen Instruments
Hamilton Watch Co.
Hammarlund Mfg. Co., Inc.
Hammel-Dahl Co.
Hankison Corporation
Hathaway Instrument Co.
A. W. Haydon Company
Hays Corporation
Karl Heitz, Inc.
Carl Hermann Associates
Hickok Electrical Instrument Co.
Hoke, Inc.
Hycon Manufacturing Co.
Hygrotester, Inc.

I

Ideal-Aerosmith, Inc.
Illinois Testing Laboratories, Inc.
The Imperial Brass Mfg. Co.
Industrial Engineering Corp.
Industrial Instrument Corp.
Industrial Laboratories, Pub. Co.
Industrial Timer Corp.
Industrol Corp.
Institute of Radio Engineers
Instrof Incorporated
Instron Engineering Corp.
Instruments Publishing Co.

J

J-B-T Instruments, Inc.
Jensen Instrument Co.
Jerguson Gage & Valve Co.

K

W. A. Kates Company
Kaye Development Co.
Kearfott Company
Kellogg Switchboard & Supply Co.
The C. M. Kemp Mfg. Co.
Keystone Tool Corp.
Kieley & Mueller, Inc.
Kollmorgan Optical Corp.

L

Lapp Insulator Co.
Leeds & Northrup Co.
Leslie Co.
Librascope, Inc.
Link Aviation, Inc.
Liquidometer Corp.

M

Magnetrol, Inc.
William I. Mann Co.
Manning, Maxwell & Moore
Marquardt Aircraft Company
Marshalltown Mfg. Co.
Mason-Neilan Regulator Co.
MB Manufacturing Co., Inc.
Measurements Corporation
Meletron Corp.
The Mercold Corporation
Meriam Instrument Co.
Midwestern Instruments
Mikron Instruments, Inc.
William Miller Instruments
Milton Roy Co.
Mine Safety Appliances Co.
Minneapolis-Honeywell Regulator Co.
John R. Monsell Co.
Samuel Moore & Company
Moore Products Co.
Moorehouse Machine Co.
F. L. Moseley & Co.
Mycalex Corp. of America

N

Nash Engineering Co.
Nemeth Inc.
New Hermes Engraving Machine Corp.
North American Aviation, Inc.
North American Philips Co.

O

Offner Electronics, Inc.
Optical Coating Labs, Inc.

P

Palmer Thermometers, Inc.
Panellit, Inc.
Penberthy Injector Co.
(Div. of Buffalo Eclipse Corp.)
Penn Industrial Instrument Div.
(Burgess-Manning Co.)
The Perkin Elmer Corp.
Perkin Engineering Corp.
Perlmuth-Colman Instrumentation
The Permutit Company
Phillips Control Corp.
Photocon Research Products
Potter Aeronautical Co.
The Precision Coil Spring Co.
Precision Scientific Company
Precision Thermometer & Instrument Co.



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Toplines
MATERIAL HANDLING EQUIPMENT

★ ALBION INDUSTRIES, INC.
The Outstanding Industrial Casters

★ CHISHOLM-MOORE HOIST
Division of Columbus-McKinnon Chain Corp.

LODESTAR ... The first heavy duty version of the small electric hoist.

METEOR ... Rugged — for heavy loads.

CYCLONE ... High speed chain hoist.

★ R. G. LE TOURNEAU, INC.
Manufacturers of Hoists From 5 to 30 Tons
With Famous LeTourneau Motor and Control

Complete Stocks in Los Angeles

We Want to Serve You and Hope You Will Call.

MATERIAL HANDLING EQUIPMENT
H-M
STANLEY E. MORRIS COMPANY

5584 Alhambra Avenue
Los Angeles 32 — California
CApitol 1-5148

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R

Radiation, Inc.
Radio Frequency Laboratories, Inc.
J. B. Rea Company, Inc.
Republic Manufacturing Co.
Research Controls
Revere Corporation of America
Rex Corporation
Robertshaw-Fulton Controls
Fulton Sylphon Division
Robertshaw-Fulton Controls Co.
Field Instr. Div.
Robinson Orifice Fitting Co.

S

Scam Instrument Corp.
Servo-Tek Products Co., Inc.
Shallcross Mfg. Co.
Shand & Jurs Co.
The Skinner Chuck Co.
(Skinner Electric Valve Div.)
S. Morgan Smith Co.
T. Louis Snitzer
Southern California Meter Association
Southwestern Industrial Electronics Co.
Special Screw Products Co.
Specific Products
Statham Laboratories, Inc.
Streeter-Amet Company
The Superior Electric Co.
Superior Tube Co.
Surprenant Manufacturing Co.
The Swartwout Company
Swiss American Jewel Bearings Co.
Swissomatic Products Co.

T

Taylor Instrument Cos.
Technical Charts, Inc.
Tektronix, Inc.
Tenney Engineering Co., Inc.
Thermo Electric Mfg. Co.
Tracerlab, Inc.
Traid Corporation
Trinity Equipment Co.

U

Union Carbide & Carbon Corp.
(Linde Air Products)
Unistrut Products Co.
United Electric Controls Co.
United States Air Force
U. S. Atomic Energy Commission
U. S. Department of Commerce
U. S. Navy
U. S. Electrical Motors, Inc.
U. S. Engineering Co., Inc.
U. S. Gauge
(American Machine & Metals Inc.)
Unitek Corp.

V

Vapor Recovery Systems Co.
Varian Associates
G. H. Vaughan Co.
Veeder-Root, Inc.

W

Wallace & Tiernan Co., Inc.
WAC Engineering Co.
Warren Electronics, Inc.
Waterman Products Co.
Waugh Engineering Co.
The Weatherhead Co.
W. M. Welch Mfg. Co.
West Instrument Corp.
Westberg Mfg. Co.
Western Control Equipment Co.
Western Sales Engineering
Weston Electrical Instrument Corp.
Wiancko Engineering Co.
Wright Engineering Co.

CM Lodestar®

ENTIRELY NEW
differently NEW



FLEXIBLE LINK CHAIN

PUSH-BUTTON CONTROL

FEATURING:

- Push Button Control
- Self-Adjusting Heavy Duty Brake
- Sealed-in Lifetime Lubrication
- Overload Protection
- Full Enclosed Components
- Lowest Headroom
- "CM-Alloy" Flexible Link Chain

CAPACITIES: from ⅛ to 1 ton. Single and 3 phase. ¼ ton model weighs only 51 pounds.

$149.50 and up

Built to serve you without costly maintenance



Lodestar is the first truly "heavy duty" version of the small electric hoist. The CM Lodestar is designed to operate without costly maintenance or interruptions in your work schedules. The initial cost is practically your only cost with a Lodestar... an extremely low cost indeed!

WRITE US or call your CM distributor for literature, prices and quick delivery from stock.

CHISHOLM-MOORE HOIST DIVISION
Columbus McKinnon Chain Corporation
Tonawanda, New York
REGIONAL OFFICES: NEW YORK • CHICAGO • CLEVELAND
In Canada: McKinnon Columbus Chain Limited, St. Catharines, Ontario

CM HOISTS AND CHAIN

... for more details circle No. 80 on Reader Service Postcard

See Directory listing page 106, Yellow Section

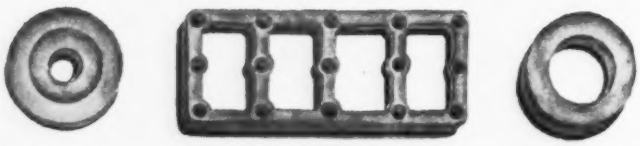
On the Coast it's...

A.B.BOYD COMPANY

for

American Felt Company
TRADE MARK

felt for every purpose



SEALS GASKETS WASHERS

also vibration control, weatherstripping, insulation, honing, filtration.

WE CARRY COMPLETE STOCKS WITH CUTTING DIVISIONS IN SAN FRANCISCO AND LOS ANGELES TO CUT FELT TO ANY REQUIRED SPECIFICATION.

WRITE FOR DATA SHEETS

1. Felt Density and Hardness
2. Adhesives for Felt Application
3. "K" Felt-Sound Absorption and Thermal Insulation
4. Special Felt Treatments
5. S.A.E. Specifications and AN-F-14
6. Wicks and Lubrication
7. A.S.T.M. Methods of Test for Wool Felt, D461
8. U.S. Military Specification MIL-F-10954 (superseding 8-15G)
9. Sheet Felts, Standard Grades and Specifications
10. Vibration Isolation with Vibra-Mount
11. Felt Seals, Their Design and Application
12. Flame-proofed Felt
13. Felt in Compression
14. Vistex-Packings, Gaskets, Seals
15. Felt and Filtration

Book—How to Reduce Vibration

A.B.BOYD COMPANY

1235 Howard St.	763 E. 14th St.	735 S. E. Union	404 Dexter Ave.	Spreckels Building
San Francisco 3, Cal.	Los Angeles 21, Cal.	Portland, Ore.	Seattle 9, Wash.	San Diego, Cal.
UN 1-2850	PR 6121	VE 6649	MA 6545	FR 90321

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Specify items desired

WESTERN Materials Handling & Packaging BUYERS' DIRECTORY

FIRST EDITION of a

Western Industry

special service feature for plant operating, maintenance and purchasing executives in the eleven Western states

Arizona • California • Colorado • Idaho • Montana • New Mexico • Nevada • Oregon • Utah • Washington • Wyoming

WHERE TO BUY IN THE WEST

. . . Yellow Pages, 102-124

Contains . . . Names of materials handling and industrial packaging equipment manufacturers in the entire U. S. who have Western sales offices, distributors or representatives.

Complete buying information is shown with each manufacturer's listing, as follows:

Home office address

Products manufactured

Manufacturer branch offices in the West, their addresses and telephone numbers

Distributors and representatives in the West, their addresses and telephone numbers

CLASSIFIED PRODUCTS

. . . Blue Pages, 125-132

Contains . . . Names of manufacturers cross-referenced under 175 categories of materials handling and industrial packaging equipment.

HOW TO USE THIS DIRECTORY

For any product to be purchased or serviced, or about which further details are wanted, refer to correct manufacturer's listing in yellow pages to obtain name, address and telephone number of sales and engineering office nearest to you.

If you want more information about a certain type of equipment but names of manufacturers are not known, refer to correct heading in blue pages for names of all manufacturers of that item who have sales offices in the West.

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ACME STEEL CO., 2840 Archer Ave., Chicago 8, Ill.
Strapping, Corrugated fasteners, Wire stitching machines, Silverstriching wire.

See advertisement on page 20

Branches
Calif., Los Angeles—4901 Pacific Blvd. KI 1245
Calif., San Francisco — 750 Second St. GA 1-7582
Colo., Denver—1863 Wazee St. TA 5-0513
Ore., Portland—2044 N.W. Pettygrove. CA 1637
Utah, Salt Lake—520 W. Second South St. 5-9567
Wash., Seattle—1025 Sixth Ave. So. EL 7584

AEROL CO., 1731 Workman St., Los Angeles 31, Calif. CA 5-1501
Casters, Wheels (general industrial, hand truck, rubber tired, tractor, trailer).
Representatives
Calif., San Diego — Winn Supply Co., 256 Seventh St.
Calif., San Francisco—Hamerslag Equipment Co., 45 Elmira St.
Colo., Denver—Joe Coursey Equipment Co., 1243 Walnut St.
Ore., Portland—Air Mac, Inc., 1435 S.E. Union Ave.
Wash., Seattle—Air Mac, Inc., 3838 Fourth Ave. So.

ALBION INDUSTRIES, INC., 814 No. Clark St., Albion, Mich.
Casters, Wheels (general, hand truck, rubber tired, tractor, trailer).
Representatives
Calif., Los Angeles—Stanley E. Morris Co., 5584 Alhambra. CA 1-5148
Calif., Oakland—Industrial Service Co., 616 McClary Ave. LO 9-2545
Colo., Denver—Joe Coursey Equipment Co., 1243 Walnut St. MA 6976
Ore., Portland—Oregon Handling Equipment, 2949 N.W. St. Helens Rd.
Wash., Seattle—Cascade Handling Equipment, 410 Battery St.

ALLIS-CHALMERS MFG. CO., CONSTRUCTION MACHINERY DIV., Box 512, Milwaukee, Wisc. Also, see **BUDA DIV.**
Cranes (yard, tractor), Loaders, Tractors (diesel, gasoline warehouse), Tractor Shovels, Bulldozers.

See advertisement on page 22

Branches
Calif., Los Angeles—4440 E. 49th St. LO 5-5421
Calif., Oakland—1400 Park Ave. OL 3-3100
Idaho, Pocatello—602 So. First Ave. 193
Mont., Billings—25th & Fourth Aves. 5-5484
Ore., Portland—1305 S.E. Union Ave. EA 2177
Representatives
Ariz., Phoenix—Neil B. McGinnis Co., 500 So. Central Ave. AL 3-5391
Calif., Bakersfield—San Joaquin Tractor Co., Calif. Ave & Hwy. 99. FA 4-4517
Calif., Eureka — Aikins Tractor Co., 2016 Broadway. HI 2-2986
Calif., Los Angeles—Shaw Sales & Service Co., 5100 Telegraph Rd. AN 1-7141
Calif., Oakland—Buran Equipment Co., 777 100th Ave. TR 2-5335
Calif., Stockton—Moore Equipment Co., Cherokee Lane 7 Hwy. 99. Phone 4-7641
Colo., Denver—Power Equipment Co., 3440 Brighton Blvd. KE 4-4221
Idaho, Idaho Falls—Southern Idaho Equipment Co., No. Yellowstone Hwy. 2810
Mont., Billings—Seitz Machinery Co., 420 No. 24th St. 2-2103
Mont., Missoula—Mountain Tractor Co., 1345 W. Broadway. 6-6651
Mont., Sidney—Richland Machinery Co., 402 E. Morrill St. 518
Nev., Elko—A-D Machinery Co., 251 W. Commercial St. Phone 92.
Nev., Reno—Moore Equipment Co., 1700 W. Fourth St. 2-7025
N. Mex., Albuquerque—Harry Cornelius Co., 1510 Second St., N. W. 3-1776
N. Mex., Roswell—Smith Machinery Co., 512 E. Second St. 3981
Ore., Eugene—Pape Brothers, 1060 W. First Ave. 5-0531
Ore., Medford—Haupert Tractor Co., 3610 No. Pacific Hwy. 2-5279
Ore., Portland—Wood Tractor Co., 1033 S.E. Main St. VE 3151
Utah, Salt Lake—Cate Equipment Co., 49 E. Ninth St. So. 9-2021
Wash., Seattle—A. H. Cox Co., 1757 First Ave. So. MA 1121
Wash., Spokane—American Machine Co., 1026 W. Broadway. FA 2591
Wash., Wenatchee—Mid-State Equipment Co., 313 No. Mission St. NO 2-7151
Wyo., Casper—Studer Tractor & Equipment Co., Box 779. Phone 2-5381

ALVEY CONVEYOR MFG. CO., 9301 Olive St. Rd., St. Louis 24, Mo.
Conveyors (apron, automatic, bag and bale, belt, bucket, chain or link, drag, flight, etc.)
Representative
Calif., San Francisco—Mailler-Searles, Inc., 300 Seventh St. HE 1-8171

AMERICAN CHAIN & CABLE CO., 929 Connecticut Ave., Bridgeport 2, Conn.
Chains, Cranes (hand power, jib, pillar, swing, bracket, double beam overhead, electric and electric traveling overhead, foundry overhead, hand power traveling overhead, "I" beam overhead, monorail overhead), Hoists (chain, electric, hand, portable, traveling), Slings (chain, wire rope), Wire Rope.
Branches
Calif., Los Angeles—2216 So. Garfield Ave.
Calif., San Francisco—890 Tennessee Ave.

AMERICAN ENGINEERING CO., Aramingo Ave. & Cumberland St., Philadelphia, Pa.
Hoists (electric, monorail).
Representatives
Ariz., Phoenix—Kistler Industrial Service Co., 902 So. Central Ave. AL 4-2911
Calif., San Francisco—A. H. Coates Co., 420 Market St. SU 1-0879
Colo., Denver—Joe Coursey Equipment Co., 1243 Walnut St. AC 2-9581
Ore., Portland—F. E. Bennett Co., 426 N.W. Sixth Ave. AT 2321
Texas, El Paso—E. D. Flournoy Co., 1224 E. Missouri St. 3-6372
Utah, Salt Lake—Sales Engineering Co., 526 W. Eighth South St. 5-1162

AMERICAN HOIST & DERRICK CO., 63 So. Robert St., St. Paul 1, Minn.
Clamps (wire rope), Cranes (gantry, yard), Hoists (crane, derrick, drum, gasoline).
Representatives
Calif., Long Beach—Harold L. Lindberg, 6138 E. Tanglewood St. 39-4305
Wash., Mercer Island—Robert H. Lampman, 9029 E. Shorewood Drive. AD 3753 (Seattle)

AMERICAN MACHINE & FOUNDRY CO., 261 Madison Ave., New York 16, N. Y.
Work positioners (AMF Industrial Lowerator Dispensers)
Representatives
Calif., Los Angeles—Harron, Rickard & McCone, 2850 Santa Fe Ave.

AMERICAN MFG. CO., Noble & West Sts., Brooklyn, N. Y.
Rope (manila, sisal, dacron, nylon), Slings (rope), Twine (jute, sisal), Packing.
Representative
Calif., San Francisco—Charles J. Dilke, 383 Brannan St. YU 2-5707

AMERICAN MONORAIL CO., 13117 Athens Ave., Cleveland, Ohio
Conveyors (continuous flow, foundry, overhead, trolley), Cranes (gantry, hand power, jib, pillar, swing, bracket, double beam overhead, electric and electric traveling overhead, foundry overhead, hand power traveling overhead, monorail overhead), Hoists (monorail), Scales (monorail), Tractors (monorail), Trolleys. Continuous trolley driven conveyors manufactured by Landahl Conveyor Co., Subsidiary (same Western distribution).

See advertisement on page 14

Branch
Calif., Los Angeles—4645 Telegraph Rd. AN 9-7256

Representatives
Calif., San Francisco—Robert M. Taylor Co., 268 Market St. YU 2-1760
Ore., Portland—McMahon Brothers, Inc., 337 Pittock Block. AT 6878
Utah, Salt Lake—Modern Equipment Co., 52 W Second St., So. 9-2171
Wash., Seattle—F. T. Crowe & Co., 825 Second Ave. W. AL 3844

AMERICAN PULLEY CO., 4200 Wissahickon Ave., Philadelphia 29, Pa.
Belting, Pulleys (conveyor, other), Trucks (bag, barrell, drum, dolly, elevating or lifting, factory and warehouse, hand, hand-lift, hand-electric lift, hand-mechanical lift, hydraulic lift, electric tiering), Wheels (conveyor, hand truck).
Branches
Calif., Los Angeles—L. D. Christison, 1238 So. Atlantic Blvd. AN 6061
Calif., San Francisco—G. P. Welshaar, 420 Market St. SU 1-1582
Wash., Seattle—H. F. Adams, 911 Western Ave. MU 0117

AMERICAN RUBBER MFG. CO., 1145 Park Ave., Oakland 8, Calif.
Belting (conveyor, elevator, endless), Belt Fasteners and Belt Lacings.
Branches
Calif., Los Angeles—1741 W. Slauson Ave. AX 2-0201
Calif., Oakland—1145 Park Ave. OL 2-0800
Idaho, Boise—1116 No. 18th St. 4-2168
Ore., Portland—Dekum Bldg. CA 1708
Utah, Springville—68 No. Main. HU 9-5586
Wash., Seattle—Smith Tower. SE 1727

AMERICAN SALES ENGINEERS, 5959 Linsdale Ave., Detroit, Mich.
Racks (pallet, storage, other), Steel shelving.
Representatives
Calif., Los Angeles—Green-Penny Co., 425 E. Washington Blvd. PR 9195
Calif., San Francisco—Hamerslag Equipment Co., 45 Elmira St. JU 7-1357
Colo., Denver — Sparkman-Barker Co., 550 Santa Fe Dr. KE 1328
Ore., Portland—McMahon Brothers, Inc., 337 Pittock Block. AT 6878
Utah, Salt Lake—Sparkman-Barker Co., 1181 Sherman.
Wash., Seattle—Air-Mac, Inc., 3838 Fourth Ave. So. MU 3388

AMES HARRIS NEVILLE CO., 2800 17th St., San Francisco 10, Calif.
Bags (burlap, canvas, multi-wall, shipping and polyethylene).
Branches
Ariz., Phoenix—425 E. Jackson St. AL 4-9584
Calif., Glendale—5454 San Fernando Rd. CH 5-6581
Calif., Stockton—102 W. Weber Ave. 3-1659
Idaho, Idaho Falls—Airport Way & Burgess St. Phone 33
Idaho, Twin Falls—240 Fourth Ave. So. Phone 2100
Ore., Portland—1506 N.W. Hoyt St. BR 1246
Utah, Salt Lake—135 W. Ninth So. 22-0416

ANTHONY CO., Streator, Ill.
Loaders (tailgate), Lift gates (motor trucks).
Representatives
Ariz., Phoenix—Auto Safety House, 4343 E. Washington.
Calif., Los Angeles—Lambert Co., 1202 E. Olympic Blvd.
Calif., Oakland—C & C Trailer & Body Co., 8855 San Leandro St.
Colo., Denver—Winter-Weiss Co., 2201 Blake St.
Mont., Billings—Eaton Metal Products Co., 501 No. 18th St.
Mont., Great Falls—Eaton Metal Products Co., Express Bldg.
N. Mex., Albuquerque—Winter-Weiss Co., 6130 No. Second St.
Ore., Portland—Northwest Truckstell Sales, Inc., 835 S. E. Hawthorne Blvd.
Utah, Salt Lake—Utah Truck Equipment Co., 1045 So. Main St.
Wash., Seattle—Nelson Truck Equipment Co., 128 Westlake Ave. No.
Wash., Spokane—Critzer Equipment Co., E. 3804 Front St.

ARNOLT CORP., Argonne Rd., Warsaw, Ind.
Lifting Bars, Roller Dollies

Representatives
Calif., Newport Beach—Fred W. Winn, Jr., P. O. Box 295
Calif., San Francisco—Arthur H. Collbran, 25 California St.
Wash., Seattle—Bruce P. Rutherford, 1954 First Ave. So.

ARO EQUIPMENT CORP., Enterprise & Trevitt Sts., Bryan, Ohio
Hoists (air).
Branch
Calif., Los Angeles—Aro Equipment of Calif., 3141 So. Grand Ave. RI 7-7531
Representatives
Ariz., Phoenix—Walter F. Vogel, 35 W. Marshall Ave. AM 6-9165
Calif., Oakland—R. E. Sanderson, 293 26th Ave. HI 4-5824
Wash., Seattle—Pratto Sales, 928 12th Ave. EA 6655

AURORA EQUIPMENT CO. see **EQUIPTO DIV.**

AUSTIN-WESTERN DIV., BALDWIN-LIMA-HAMILTON CORP., 601 No. Farnsworth Ave., Aurora, Ill.
Cranes (yard), Hoists (crane, gasoline, hydraulic, portable, traveling), Loaders, Magnets.
Branch
Calif., San Francisco—33 Clementina St. JU 8-7004
Representatives
Ariz., Phoenix—Shriver Machinery Co., 1756 Grand Ave. AL 2-2356
Calif., Los Angeles—Smith-Booth-Usher Co., 2001 Santa Fe Ave. TR 6911
Calif., San Francisco—Edward R. Bacon Co., Folsom and 17th St. HE 1-3700
Colo., Denver—Liberty Trucks and Parts Co., 690 Lincoln St. MA 3-3241
Idaho, Boise—Engineering Sales Service, Inc., 410 Capitol Blvd. 3-2535
Mont., Billings—Western Construction Equipment Co., 505 No. 24th St. 9-5501
Mont., Great Falls — Western Construction Equipment Co., Box 659. Phone 5223
Mont., Missoula—Western Construction Equipment Co., Stephens and Mount Ave. Phone 4040
Nev., Reno—C. D. Roeder Equipment Co., 917 W. Third St. 2-1852
N. Mex., Albuquerque—N. C. Ribble Co., 1304 No. Fourth St. 3-3733
Ore., Portland—Columbia Equipment Co., 1240 S.E. 12th Ave. EA 7148
Utah, Salt Lake—Western Machinery Co., 2300 So. Main St. 6-3668
Wash., Seattle—Columbia Equipment Co., 5030 First Ave. So. LA 1530
Wash., Spokane—Columbia Equipment Co., No. 1007 Freya St.
Wyo., Casper—Keremi Tractor & Equipment Co., 414 So. Elm St. 3-6631
Wyo., Cheyenne—Keremi Tractor & Equipment Co., 902 W. 22nd St. 3-8923

AUTOETTE, INC., 730 W. Esther St., Long Beach 13, Calif.
Carts, Trucks (industrial electric, gas-electric, gasoline).
Representatives
Ariz., Phoenix—Mid-States Supply Co., 2246 E. McDowell Rd.
Calif., San Diego—Autoette Sales & Service of San Diego, 3760 30th St. N.P.
Calif., Long Beach—Autoette Sales of Long Beach, 521 American Ave.
Calif., San Francisco—Industrial Truck Sales, 563 Second St.
Calif., Santa Monica—Santa Monica Scooter Mart, 3103 Pico Blvd.
Colo., Denver—Iver J. Esbenson Co., 1725 E. 17th Ave.
Idaho, Hansen—H. S. Callen, Shoe Sole Ranch
Mont., Great Falls—Lease's Garden Center, 810 12th St. No.
N. Mex., Albuquerque—John McCormack, Inc., 1730 Lomas Blvd.
Ore., Portland—Braley & Graham, 1411 W. Burnside
Wash., Seattle—B. F. Shearer Co., 2318 Second Ave.
Wash., Spokane—Gill Ride Co., P.O. Box 1212
Wyo., Laramie—Knight Motors, 758 No. Third

AUTOMATIC TRANSPORTATION CO., 101 W. 87th St., Chicago 20, Ill.
Trucks (die handling, elevating or lifting, factory and warehouse, electric fork, gasoline fork, motorized hand, industrial, gasoline lift, hand-electric lift, power-driven lift, packing house, pallet, paper roll, sheet handling, skid handling, straddle, electric tiering).
Representatives
Calif., Huntington Park—L. J. Lutz Co., 7962 Salt Lake Ave. KI 5102
Calif., Oakland—E. C. Buehrer Associates, 351 Fifth St. TE 6-2082
Colo., Denver—Hahn Equipment Co., 1745 Blake St. KE 4-5500
N. Mex., Albuquerque—Stryco Sales, Inc., 312 Industrial N.E. 4-6048
Utah, Salt Lake—Equipment Supply Co., 16 Post Office Place. 3-9074
Wash., Seattle—Hallidie Machinery Co., 210 Hudson St. LA 9520

AUTO SHEET METAL WORKS, 735 E. Gage Ave., Los Angeles, Calif.
Boxes for shipping (corrugated steel), Carts (hand, push), Pallets (steel), Racks (pallet storage), Tables (portable), Trucks (box type, dolly, packing house, paper roll, sheet handling, skid handling).

See advertisement on page 95

Representatives
Calif., Los Angeles—M. E. Canfield Co., 419 E. Third St. MA 6-6606
Calif., Los Angeles—Irving G. King Co., 821 So. San Mateo. TU 3176
Calif., Los Angeles—Robco, Inc., 5348 Jillson St. AN 5126
Calif., San Francisco—Hamerslag Equipment Co., 45 Elmira St. JU 7-1357
Wash., Seattle—Norwest Co., 330 Second Ave. W. AL 8442

BAKER-RAULANG CO., DIV. OF OTIS ELEVATOR CO., 1250 W. 80th St., Cleveland, Ohio
Cranes (yard, truck, tractor), Trucks (diesel fork, electric fork, gasoline fork), Side-loading fork unit.
Representatives
Calif., Los Angeles—Glenn A. Harshbarger Co., 3517 San Fernando. CL 6-2132
Calif., San Francisco—Elder & Co., 390 Seventh St. UN 1-5480
Colo., Denver—Gunderson-Taylor Machinery Co., 1237 Shoshone. TA 5-1327
Ore., Portland—Oregon Handling Equipment Co., 2949 N.W. St. Helens Rd. AT 4196
Utah, Salt Lake—Riter Engineering Co., Kearns Bldg. 3-7933
Wash., Seattle—Cascade Handling Equipment Co., 410 Battery St. MA 7069

BALDWIN-LIMA-HAMILTON CORP., So. Main St., Lima, Ohio
Lima shovels, cranes, draglines, pullshovels.
Branches
Calif., Burlingame—1452 Drake Ave. DI 3-8408
Calif., La Mirada—14120 E. Rosecrans Ave. TO 3-5761
Colo., Denver—3630 Gray St., HA 4-1184
Wash., Seattle—1932 First Ave. So. SE 5420
Representatives
Ariz., Phoenix—Shriver Machinery Co., 1756 Grand Ave. AL 2-2356
Calif., Eureka—McGaraghan Supply Co., 529 Broadway
Calif., Los Angeles—Smith-Booth-Usher Co., 2001 Santa Fe Ave. TR 6911
Calif., Oakland—Bay Cities Equipment, Inc., 2792 Cypress St. TW 3-8313
Calif., Redding—Cascade Industrial Supply, Inc., Hwy. 99 So. 3046
Colo., Denver—Faris-Mortiz Equipment Co., 1554 Wazee St. AC 2-3873
Idaho, Boise—Feenaughty Machinery Co., 600 Front St., 3777
N. Mex., Albuquerque—N. C. Ribble Co., 1304 No. Fourth St.
Ore., Portland—Feenaughty Machinery Co., 112 S. E. Belmont St. EA 2187
Utah, Salt Lake—Heiner Equipment & Supply Co., 501 W. Seventh So.
Wash., Seattle—Modern Machinery Co., 4975 Third Ave. So. RA 9267
Wash., Seattle—Western Tractor & Equipment Co., 2230 First Ave. So. MA 5180
Wash., Spokane—Modern Machinery Co., E. 4412 Trent Ave. KE 9353

BALDWIN-LIMA-HAMILTON CORP., see **AUSTIN-WESTERN DIV.**

BARBER-GREENE CO., 400 N. Highland Ave., Aurora, Ill.
Belting (conveyor), Conveyors (belt, portable), Rollers (conveyor).
Branch
Calif., San Mateo—318 S. B St. DI 3-5828
Representatives
Ariz., Phoenix — Road Machinery Co., 716 S. Seventh St. AL 8-7981
Calif., Los Angeles—Brown-Bevis Industrial Equipment Co., 6550 E. Washington Blvd. RA 8-6321
Calif., San Francisco—Coast Equipment Co., 444 Eighth Ave. MA 1-5740
Calif., San Francisco—Mines Engineering and Equipment Co., 454 Montgomery St. SU 1-7224
Colo., Denver—Ray Corson Machinery Co., 350 Kalmath St. MA 0165
Idaho, Boise—Engineering Sales, Service, Inc., 410 Capitol Blvd. 3-2535
Mont., Billings—Western Construction Equipment Co., 505 No. 24th St. 9-5501
Nev., Reno—Sierra Machinery Co., 307 Morrill Ave. 2-6981
N. Mex., Albuquerque—Contractors Equipment and Supply, 707 N.E. Broadway. 3-3565
Ore., Portland—Columbia Equipment Co., 1240 S.E. 12th Ave. EA 7148
Utah, Salt Lake—Kimball Equipment Co., 222 W. 17th St. 6-6775
Utah, Salt Lake—Mine and Smelter Supply Co., 121 W. 2nd South St. 3-2791
Wash., Seattle—Columbia Equipment Co., 5030 First Ave. So. LA 1530
Wash., Spokane — Columbia Equipment Co., 2604 Lamont St. MA 3459
Wyo., Cheyenne—Keremi Tractor and Equipment Co., 902 W. 22nd St. Phone 8923

BARRETT-CRAVENS CO., 630 Dundee Road, Northbrook, Ill.
Elevators (barrel, portable tiering, other), Hoists (electric, hand), Racks (pallet, storage, other), Stackers (portable electric, portable hand), Tractors (electric warehouse), Trucks (bag, barrell, drum, die handling, elevating or lifting, factory and warehouse, diesel fork, electric fork, hand, industrial, hand lift, hand-electric lift, hand-mechanical lift, hydraulic lift, power-driven lift, pallet, paper roll, sheet handling, skid handling, straddle, electric tiering, other).
Representatives
Ariz., Phoenix—Kistler Industrial Service Co., 902 So. Central Ave. AL 2-7217
Calif., Fresno—Valley Forklift Rental & Equipment Co., 2424 So. Railroad Ave. 8-2674
Calif., Los Angeles—Irving G. King & Co., 821 Mateo St. TU 3176
Calif., Oakland—Roll-Rite Corp., 801 Jefferson St. GL 1-5921
Calif., San Francisco—Hamerslag Equipment Co., 45 Elmira St. JU 7-1357
Colo., Denver—McDonald-Hunt Scale & Supply Co., 1540 Wazee St. AC 2-5621
Ore., Portland—F. E. Bennett Co., 426 N.W. Sixth Ave. AT 2321
Utah, Salt Lake—Arnold Machinery, 433 W. Second So. 22-5631
Wash., Seattle—Materials Handling Equipment Co., 2963 First Ave. So. SE 0997
Wash., Spokane—Equipment Supplies Co., No. 217 Bernard. TE 1113

BASSICK CO., 437 Howard St., Bridgeport, Conn.
Casters, Wheels (general industrial, rubber tired), Position Locks.
Branches
Calif., So. San Francisco—124 So. Bayshore Blvd. JU 3-1740
Calif., Vernon—3320 Fruitland Rd. LO 8-5528
Representatives
Colo., Denver—L. G. Rathburn, 1414 16th St. TA 3762
Utah, Salt Lake—E. C. Coffin Co., 1661 48th South St.

A. J. BAYER CO., 2300 E. Slauson Ave., Los Angeles 58. LU 5-2171
Conveyors (apron, automatic, bag and bale, belt, bucket, chain or link, continuous flow, drag, flight, foundry, gravity roller, live roller, overhead, skate, slat, trolley, vertical), Dock Boards, Elevators (barrel, package, etc.), Pulleys, Conveyor Rollers, Conveying Tables, Conveyor Wheels.

BEACON MACHINERY, INC., Box 188, East St. Louis, Ill.
Automatic pallet loaders, unloaders, stackers and dispensers; Corrugated box compressors; Dock boards; Hydraulic bridge-lifts; Hydraulic hoists; Hydraulic jacks.
Representatives
Calif., Los Angeles—Robco, Inc., 5348 Jillson St. AN 5-5126
Calif., San Francisco—Hamerslag Equipment Co., 45 Elmira St. JU 7-1357
Wash., Seattle—Materials Handling Equipment Co., 2963 First St. So. SE 0997

JOHN BEAN DIV., FOOD MACHINERY & CHEMICAL CORP., 1115 Coleman St., San Jose 3, Calif.

Conveyors (belt, continuous flow, gravity roller, live roller, portable, skate, special and other), Elevators (belt), Pumps, Rollers (conveyor), Tables (conveying), Trucks (bag, barrel, drum, hand, packing house), Wheels (conveyor).

See advertisement on page 164

Branches

Calif., San Jose—Coleman at Newhall St. CY 2-8575
Wash., Wenatchee—1225 No. Wenatchee Ave. NO 2-5126
Wash., Yakima—215 No. Third. YA 2-9131

Representatives

Calif., Aptos—Robert Fosdick, Route 2, Box 2924. MU 8-3372
Calif., Berkeley—Jack Rathjens, 755 Grizzly Peak Blvd. LA 5-4393
Calif., Fresno—Harry Miller, 1035 Dakota Ave. 9-4541
Calif., Riverside—Jack Fegtly, 6358 Neva Pl. OV 6-0206
Calif., Sacramento—Carroll Ball, Jr., 2213 Shaw St. WA 5-0248
Colo., Greeley—Carl Fite, 1625 Seventh Ave. Phone 4631
Idaho, Boise—Willis Stone, 501 Chalet Lane. 2-3949
N. Mex., Albuquerque—Harold Sanburg, 1005 Indiana S.E. 6-7158
Ore., Portland—Herb Hill, 4424 N.E. 39th Ave. MU 1075

BELT CORP., 5314 Mill St., Orient, Ohio

Conveyors (bag and bale, belt, chain or link, flight, portable).

See advertisement on page 145

Representative

Calif., Pomona—Keville Industrial Service, P. O. Box 1049. LY 2-3977

BEMIS BROTHERS BAG CO., 408 Pine St., St. Louis 2, Mo.

Bags (burlap, canvas, multi-wall, shipping).

Branches

Calif., San Francisco—1000 Sansome St. GA 1-2883
Calif., Wilmington—920 E. Pacific Coast Highway. TE 5-3111
Wash., Seattle—65 Atlantic St. EL 0660
Wash., Vancouver—1401 W. 26th St. OX 4-1523

BERGER ENGINEERING CO., 3236 16th Ave. S. W., Seattle 4, Wash. MU 4280

Cranes (gantry, jib, double beam overhead, electric and electric traveling overhead), Hoists (crane, derrick, drum, electric), Winches.

BETHLEHEM PACIFIC COAST STEEL CORP., 20th & Illinois Sts., San Francisco 19, Calif.

Wire Rope, Wire Rope Slings.

Branches

Calif., Los Angeles—6000 S. Boyle. LO 8-8041
Ore., Portland—5th & Yamhill Sts. CA 1841
Wash., Seattle—3631 E. Marginal Way, AV 1100
Wash., Spokane—West 725 Sprague. TE 2743

BIG JOE MFG. CO., 900 W. Jackson Blvd., Chicago 7, Ill.

Hoists (drum, electric, hand, hydraulic), Stackers (portable electric, portable hand), Trucks (electric fork, hand, motorized hand, hand lift, hand-electric lift, hydraulic lift, skid handling, straddle, electric tiering).

Representatives

Ariz., Phoenix—James P. Kinney Co., 1101 Grand Ave. AL 2-1558
Calif., Los Angeles—Colson Equipment Co., 1317 Willow St. TR 5743
Calif., Los Angeles—Cost Reduction Equipment Co., 5200 Chakemco St. LO 7-2487
Calif., Los Angeles—James P. Kinney Co., 5141 Telegraph Rd., AN 9-7411
Colo., Denver—Joe Coursey Equipment Co., 1243 Walnut St. AC 9581
Nev., Henderson—James P. Kinney Co.
N. Mex., Albuquerque—James P. Kinney Co., 1706 Central Ave. S. E. 2-2830
Ore., Portland—Air-Mac, Inc., 1485 S. E. Union Ave. FI 6524
Wash., Seattle—Air-Mac, Inc., 3838 Fourth Ave. So. MU 3388
Wash., Spokane—Air-Mac, Inc., E. 3710 Trent Ave. KE 0561
Wash., Yakima—Air-Mac., Inc., 313 No. Grandview. 2-1552

HORACE BLACKMAN CO., 5883 Blackwelder St., Culver City, Calif. TE 0-4821

Baskets (plastic), Boxes, tote, Trucks (box type).

See advertisement on page 162

Representative

Calif., San Francisco—Bill Bashford, 1485 Bayshore Blvd. DE 3-5354

BODINSON MFG. CO., 2401 Bayshore Blvd., San Francisco 24, Calif. JU 5-9641

Bins, Conveyors (apron, belt, bucket, drag, flight), Elevators (barrell, package, belt, bucket).

THE BOMAN CO., 3316 E. Olympic Blvd., Los Angeles 23, Calif. AN 3-2116

Conveyors (gravity roller, skate), Cranes (yard, truck, tractor), Elevators (portable tiering), Hoists (chain), Rollers (conveyor, other), Stackers (portable electric, portable hand), Tires (industrial truck and trailer), Trailers (factory and warehouse), Trucks (bag, barrel, drum, elevating or lifting, electric fork, gasoline fork, hand, motorized hand, industrial, gasoline lift, hand lift, hand-mechanical lift, hydraulic lift, power-driven lift, pallet, paper roll, skid handling), Wheels (conveyor, hand truck, rubber tired, tractor, trailer).

See advertisement on page 139

BORROUGHS MFG. CO., 3002 No. Burdick St., Kalamazoo, Mich.

Bins.

Representatives

Calif., Los Angeles—Hart-Cobb-Carley, 744 So. Spring St. TU 7141
Calif., Oakand—Wm. A. Gore, 1834 Adeline St. TW 3-7233
Calif., Sacramento—Capital Office Equipment, 910 J St. GL 3-4831
Colo., Denver—Sparkman-Barker, 550 Santa Fe Drive. KE 4-1528
Wash., Seattle—Wm. A. Gore, 408 Eighth Ave. No. SE 1966

BOSTON WOVEN HOSE & RUBBER CO., P. O. Box 1071, Boston 3, Mass.

Belting (conveyor, fabric, canvas, elevator, endless).

Representatives

Ariz., Tucson—2521 E. Fourth St.
Calif., Los Angeles—1052 W. Sixth St. MU 8186
Calif., San Francisco—Lippincott Co., Pacific Coast Representative, 995 Market St. EX 2-2687
Colo., Denver—845 Racine St.
Utah, Salt Lake—1016 Military Dr.
Wash., Seattle—911 Western Ave.

BOSWORTH MFG. CO., Mills Rd., Avon, Ohio

Conveyors, (continuous flow, drag, flight, foundry, portable, vertical, special and other).

Representatives

Colo., Denver—Murray Sales Co., 16 Wazee Market
Mont., Billings—Lefler & Wyomont Supply, 234 Stapleton Bldg.
Mont., Missoula—Missoula Mercantile Co.
Ore., Portland—Oregon Handling Equipment, 2949 N.W. St. Helens Rd.
Utah, Salt Lake—Arnold Machinery Co., 433 W. Second South St.
Utah, Salt Lake—Equipment Supply Co., 16 Post Office Pl.
Wash., Seattle—Nelson Truck & Equipment, 128 W. Lake No.
Wash., Seattle—K. O. Pearson, 7202 Rainier Ave.

W. H. BRADY CO., 727 W. Glendale Ave., Milwaukee 12, Wisc.

Tape (printed roll), Markers (individual self-sticking numbers and letters).

Representatives

Ariz., Phoenix—Graybar Electric Co., 434 W. Madison St. AL 3-6131
Calif., Fresno—Graybar Electric Co., 101 Van Ness Ave. FR 2-4175
Calif., Long Beach—Graybar Electric Co., 800 W. 16th St. 70-2911
Calif., Los Angeles—Electrical Specialty Co., 418 E. Third St. MI 1907
Calif., Los Angeles—Graybar Electric Co., 210 Anderson St. AN 3-7282
Calif., Oakland—Graybar Electric Co., 1911 Union St. GL 1-5451
Calif., Sacramento—Graybar Electric Co., 1900 Fourteenth St. GI 2-8976
Calif., San Bernardino—Graybar Electric Co., P.O. Box 750. Phone 9-1051
Calif., San Diego—Graybar Electric Co., 720 State St. FR 1361
Calif., San Francisco—Electrical Specialty Co., 316 11th St. HE 1-5116
Calif., San Francisco—Graybar Electric Co., 1750 Alameda St. MA 1-5131
Calif., Santa Ana—Graybar Electric Co., 301 French St. KI 3-8309
Colo., Denver—Electrical Specialty Co., 1101 Stout St. CH 4588
Colo., Denver—Graybar Electric Co., 104 Wazee Market. TA 7116
Idaho, Boise—Graybar Electric Co., 1325 Idaho St. 2-4501
Mont., Butte—Graybar Electric Co., 604 E. Aluminum St. Phone 3233
Ore., Eugene—Graybar Electric Co., 2180 Sixth Ave. W. 4-2224
Ore., Portland—Graybar Electric Co., Park and Flanders Sts. BR 6641
Utah, Salt Lake—Graybar Electric Co., 336 No. Third West St. 9-8771
Wash., Seattle—Graybar Electric Co., King and Occidental Sts. MU 0123
Wash., Seattle—Electrical Specialty Co., 2406 First Ave. So. EL 8061
Wash., Spokane—Graybar Electric Co., 152 So. Post St. RI 3151
Wash., Tacoma—Graybar Electric Co., 2112 A St. MA 0164

BRODERICK & BASCOM ROPE CO., 4203 Union Blvd., St. Louis 15, Mo.

Slings (wire rope), Wire Rope.

Branches

Calif., Los Angeles—2441 Hunter St. TR 2857
Calif., San Francisco—44 Potrero Ave. UN 3-3567
Ore., Portland—1518 N.W. Marshall. BR 2244
Wash., Seattle—655 Edmunds St. MA 1600

Representatives

(Represented by distributors throughout all Western states)

BRONCO PRODUCTS CO., 717 Stanford Ave., Los Angeles, Calif.

Dock boards (magnesium), Wheels (general industrial, hand truck, rubber tired, trailer).

See advertisement on page 140

Representatives

(Dealers and distributors in all major cities in the West.)

BROOKS EQUIPMENT & MFG. CO., 2024 Davenport Rd. S.E., Knoxville, Tenn.

System consisting of flat-bed truck body handling many types and sizes of containers.

Representatives

Calif., Los Angeles—Glenn A. Harshbarger Co., 3517 San Fernando Rd.
Calif., San Francisco—Elder & Co., 390 Seventh St.
Colo., Denver—H. M. Rattle Co., 1398 So. Santa Fe Dr.
Mont., Billings—Seitz Machinery Co., P. O. Box 1678
Ore., Portland—Oregon Handling Equipment Co., 2949 N.W. St. Helens Rd.
Texas, El Paso—E. D. Fournoy Co., P. O. Box 3625, Sta. A
Wash., Seattle—Cascade Handling Equipment Co., 410 Battery St.

BROWN-LINE CORP., 60 E. 42nd St., New York 17, N. Y.

Belting (fabric, canvas, etc.), Belt fasteners, Belt lacings, Nets (manila rope, nylon rope, cotton web-

bing, nylon webbing), Cargo straps and webbing (pallet loads, trucking), Hooks (automatic electrical or manual release), Tie-down fittings (fixed type, track type), Tie-down track, Slings, Strapping, Trucks (factory and warehouse, hydraulic lift, pallet, skid handling).

Factory

Calif., Beverly Hills — 341 No. Foothill Road. CR 5-1738 and BR 2-4397

BROWN RUBBER CO., 733 Stanford Ave., Los Angeles 21, Calif.

Tanks, chutes and hoppers (rubber lined), Pulleys (rubber covered), Tires, Wheels (general industrial, hand truck, rubber tired, tractor, trailer).

Representatives

Calif., Fresno—Pope Tire Co., 1709 Broadway
Calif., Los Angeles—Willumsen Tire Co., 718 E. Eighth St. MI 7545
Calif., San Diego—Winn Supply Co., 256 Seventh Ave.
Colo., Denver—Murray Sales Co., 16 Wazee Market

BROWN TRAILERS, INC., E. 6328 Utah, Spokane, Wash. KE 2678

Boxes for shipping (aluminum), Boxes, tote (aluminum), Trailers (factory and warehouse, motor truck and tractor).

Representatives

Ariz., Phoenix—Superior Coach Sales & Service, 2928 E. Washington St.
Calif., Fresno—C & C Trailer & Body Co., 2544 So. Cherry Ave.
Calif., Los Angeles—C & C Trailer & Body Co., 6100 E. Washington Blvd.
Calif., Oakland—C & C Trailer & Body Co., 8855 San Leandro St.
Calif., Sacramento—Jordan & Pollock, 600 First Ave.
Colo., Denver—Brown Trailer Co., 2430 E. 40th Ave.
Mont., Billings — Montana Trailer Sales & Equipment Co., 1615 Sixth Ave. No.
N. Mex., Albuquerque—Inland White Truck Co., 711 Broadway N.E.
Ore., Portland—Douglas Hood Co., 1947 N.W. Overton St.
Utah, Salt Lake—Commercial Equipment Co., 320 W. 13th South St.
Wash., Spokane—Leland Trailer Co., 217 Parkwater Station

BUCYRUS-ERIE CO., South Milwaukee, Wisc.

Cranes (yard, truck, tractor).

Branches

Calif., Los Angeles—530 W. Sixth St. MI 9642
Calif., So. San Francisco—120 Freeway St. PL 5-7436
Wash., Seattle—4447 White-Henry-Stuart Bldg. MA 6424

Representatives

Ariz., Phoenix—State Tractor & Equipment Co., 407 So. 17th St.
Calif., Bakersfield—Crook Co., 2314 No. Chester
Calif., Berkeley—West Coast Engine & Equipment Co., 1077 Eastshore Hwy.
Calif., Los Angeles—Crook Co., 2900 Santa Fe Ave.
Colo., Denver—Colorado Builders Supply Co., 1534 Blake St.
Idaho, Boise—Intermountain Equipment Co., Broadway at Myrtle St.
Idaho, Pocatello — Intermountain Equipment Co., 210 No. Fourth Ave.
Mont., Billings—Great Northern Tool & Supply Co., P.O. Box 957
Mont., Kalispell—Westmont Tractor & Equipment Co., 150 E. Spruce St.
Montana, Missoula — Westmont Tractor & Equipment Co., 150 E. Spruce St.
Nev., Reno—Nevada Equipment Service, Inc., 1525 E. Fourth St.
N. Mex., Albuquerque—R. L. Harrison Co., 1801 Fourth St. N.W.
Ore., Portland—Clyde Equipment Co., 1631 N.W. Thurman St.
Utah, Salt Lake—The Lang Co., 267 W. First South St.
Wash., Seattle—Clyde Equipment Co., 3410 First Ave. So.
Wash., Seattle—Northern Commercial Co., Colman Bldg.
Wash., Spokane — Intermountain Equipment Co., E. 611 Sprague Ave.

BUDA DIV., ALLIS CHALMERS MFG. CO., 154th & Commercial Ave., Harvey, Ill.

Jacks (hydraulic, lift, screw, other), Tractors (diesel, gasoline warehouse), Trucks (factory and warehouse, diesel fork, gasoline fork, industrial, gasoline lift, hydraulic lift, power-driven lift, pallet, paper roll).

Representatives

Ariz., Phoenix—Arizona Equipment Sales, Inc., 2312 Grand Ave. AL 8-3481
Calif., Albany—H. E. Botsford Co., 660 San Pablo Ave. LA 4-6717
Calif., Los Angeles—Pacific Lift Corp., 405 Molino St. MU 3193
Colo., Denver—B. K. Sweeney Co., 1601 23rd St. KE 4-6211
N. Mex., Albuquerque—Industrial Supply Co., 1647 Second St. N.W. Phone 3-3517
Ore., Portland—Hamilton Engine Sales Co., 2580 N.W. Upshur St. BE 3165
Wash., Seattle—Material Handling Equipment Co., Inc., 2963 First Ave. So. SE 0997

E. W. BUSCHMAN CO., 4537 Clifton Ave., Cincinnati 32, Ohio

Conveyors (apron, automatic, bag and bale, belt, bucket, cable, chain or link, continuous flow, drag, flight, foundry, gravity roller, live roller, overhead, pallet, portable, screw, skate, slat, trolley vertical), Elevators (barrel), package, belt, continuous flow), Rollers (conveyor), Trucks (hand).

Representatives

Ariz., Phoenix—Kistler Industrial Service Co., 902 So. Central Ave. AL 2-7217
Calif., Alhambra—Geo. M. Prescott Co., 825 So. Fremont Ave. CU 3-3114
Calif., Oakland—Roll-Rite Corp.. 801 Jefferson. GL 1-5921
Colo., Denver—Landes, Zachary & Peterson, 2500 W. Seventh St. MA 6203
Idaho, Idaho Falls—Arnold Machinery Co., 1302 W. Broadway. Phone 3672
Ore., Portland—John W. Negus Co., 3005 N.E. Sandy Blvd. GA 7296
Utah, Salt Lake—Arnold Machinery Co., 433 W. Second South St. 4-8431
Wash., Seattle—Equipment Supplies, Inc., 528 First Ave. So.

BUTLER MFG. CO., 7400 E. 13th St., Kansas City, Mo.

Bins (grain), Racks (pallet).

See advertisement on page 82

Branch

Calif., Richmond—Foot of 26th St. BE 2-4982

C & D BATTERIES, INC., Washington and Cherry Sts., Conshohocken, Pa.

Batteries

See advertisement on page 163

Branches

Calif., Los Angeles—1014 Venice Bldg. PR 5698
Calif., San Diego—722 Fern Glen. GL 4-6757
Calif., San Francisco—725 Second St. SU 1-6591
Colo., Denver—1732 Blake St. CH 4-1102
Ore., Portland—427 N.E. Cook St. TU 1449
Wash., Seattle—2911 First Ave. So. MA 7488
Wash., Spokane—E. 125 Mission St. FA 5379

CALIFORNIA BARREL CO., see **DUFF CALIFORNIA CO.**

CALIFORNIA TRAMRAIL CO., 1433 Illinois St., San Francisco 7, Calif. MI 7-8186

Conveyors (overhead, trolley), Cranes (gantry, hand power, jib, pillar, swing, bracket, double beam overhead, electric and electric traveling overhead, foundry overhead, hand power traveling overhead, "I" beam overhead, monorail overhead).

CAMPBELL CHAIN CO., Norway St., York, Pa.

Chains, Slings (chain).

Branches

Calif., Sacramento—712 R St.
Ore., Portland—3085 N.W. Front St.

Representatives

Calif., Los Angeles—E. R. Palmtag Co., 164 So. Central Ave.
Calif., San Francisco—E. R. Palmtag Co., 975 Indiana St.
Calif., Santa Barbara—D. R. Coutts, 1933 Mission Ridge Rd.
N. Mex., Albuquerque—A. E. Vincent, 3917 Thaxton Ave. S.E.
Ore., Portland—Lou C. Falkenhagen, 907 N.W. Irving
Utah, Salt Lake—J. H. Nicodemus, 230 So. Fourth West St.
Wash., Seattle—Merrill Falkenhagen, 2618 Second Ave.
(Also industrial distributors throughout the West)

CARRIER CONVEYOR CORP., 211 No. Jackson, Louisville, Ky.

Conveyors (vertical, vibrating).

Representatives

Calif., Los Angeles—E. M. Underwood & Associates, 3319 Beverly Blvd. DU 2-1375
Calif., San Francisco—Rodman & Co., 420 Market St. YU 2-0824
Colo., Denver—Alldredge & McCabe, 847 E. 17th St. AL 5-7496
Utah, Salt Lake—Riter Engineering, Kearns Bldg. 3-7933
Wash., Seattle—Ray Weigle, 408 Broad St. MU 1652

CATERPILLAR TRACTOR CO., Peoria 8, Ill.

Loaders (portable, self-propelled), Tractors (diesel).

Representatives

Ariz., Phoenix—Arizona Machinery Co., 2705 W. Thomas Rd.
Ariz., Yuma—Braden Machinery Co., 900 Fourth Ave.
Calif., Blythe—Honnen Machinery Co., 3591 W. Hobson Way
Calif., Chico—Sierra Tractor & Equipment Co., 1240 Park Ave.
Calif., El Centro—Faure Tractor & Equipment Co., 1414 W. Main St.
Calif., Eureka — Brizard-Matthews Machinery Co., 3990 Broadway
Calif., Fresno—Budd & Quinn, Inc., 1645 H St.
Calif., Hanford—Davies Machinery Co., 112 E. Seventh
Calif., Los Angeles—Shepherd Tractor & Equipment Co., Atlantic and Bandini Blvds.
Calif., Marysville—Marysville Tractor & Equipment Co., 712 Third St.
Calif., Merced—Halton Tractor Co., 64 16th St.
Calif., Modesto—Valley Tractor & Equipment Co., 104 Ninth St.
Calif., Napa—Berglund Tractor & Equipment Co., 1016 Soscol Ave.
Calif., Oxnard—Wallace Machinery Co., 625 No. Oxnard Blvd.
Calif., Riverside—Johnson Tractor Co., 3133 Seventh St.
Calif., Sacramento—Weaver Tractor Co., 1900 T St.
Calif., Salinas—Pringle Tractor Co., 110 Abbott St.
Calif., San Diego—San Diego Tractor & Equipment Co., 701 First Ave.
Calif., San Francisco—Thomas A. Short Co., 245 Fremont St.
Calif., San Jose—Ditz Bros., 1699 So. First St.
Calif., San Leandro—Peterson Tractor & Equipment Co., 955 First Ave.
Calif., Santa Maria—Joseph G. Moore Co., Highway 101
Calif., Stockton—Holt Bros., 700 So. Aurora
Calif., Visalia—Treanor Equipment Co., 721 E. Main St.
Colo., Denver—McCoy Co., 60th and Colorado Blvd.
Idaho, Boise—Bunting Tractor Co., 4200 Federal Way
Idaho, Idaho Falls—Parkinson Tractor Co., 1333 No. Yellowstone Ave.
Idaho, Lewiston—Nez Perce Tractor & Equipment Co., Second and C Sts.
Mont., Billings—Nash-Davis Machinery Co., 509 No. 27th St.
Mont., Great Falls—Central Machinery Co., 721 Second St. So.
Mont., Missoula—Westmont Tractor & Equipment Co., 150 E. Spruce St.
Nev., Las Vegas—James Cashman Co., 109 No. Main St.
Nev., Reno—Sanford Tractor & Equipment Co., No. Valley Rd.
N. Mex., Albuquerque—R. L. Harrison Co., 1801 Fourth St. N.W.
Ore., Klamath Falls—Crater Lake Machinery Co., 1410 So. Sixth St.
Ore., La Grande—Inland Machinery Co., 212 Greenwood St.
Ore., Pendleton—Empire Machinery Co., 1849 S.W. Court Ave.
Ore., Portland—Interstate Tractor & Equipment Co., 2855 N.W. Front Ave.
Utah, Salt Lake—Wheeler-Kershaw Co., 245 W. South Temple
Wash., Seattle—Collins Machinery Co., 4233 W. Marginal Way
Wash., Seattle—Northern Commercial Co., 427 Colman Bldg.
Wash., Spokane—Byrne-Ferris Machinery Co., 4625 E. Trent Rd.
Wash., Tacoma—Murphy-Campbell Co., 3714 So. Tacoma Way
Wash., Walla Walla—Braden Tractor & Equipment Co., 102 E. Poplar St.

Wash., Wenatchee—Columbia Tractor Co., 1014 No. Miller St.
Wash., Yakima—Webb Tractor & Equipment Co., 1122 So. First St.
Wyo., Cheyenne—Wortham Machinery Co., 517 W. 17th St.

CHAIN BELT CO., Milwaukee, Wisc.

Chains, Conveyors (apron, belt, bucket, chain or link, drag, flight, foundry, slat), Elevators (barrel, packaging, belt, bucket), Flexible couplings, Sprockets.

Branches

Calif., Los Angeles—7601 Telegraph Rd. RA 3-4751
Calif., San Francisco—366 Brannan St. GA 1-1438
Colo., Denver—5460 Colorado Blvd. AL 5-2091
Ore., Portland—2310 N. W. 24th Ave. BE 6121
Utah, Salt Lake—375 So. West Temple. 22-4311
Wash., Seattle—2425 Airport Way. MA 7051

Representatives

Ariz., Phoenix—Garrett Supply Co., 126 Madison St.
Calif., Bakersfield—Hopper Machine Works, 2315 M St.
Calif., Cloverdale—Klamath Machinery Works.
Calif., Eureka—Eureka Boiler Works & Acme Foundry Co., Foot S St.
Calif., Fresno—Valley Foundry & Machine Works, 2178 East Ave.
Calif., Long Beach—Bay City Bearing Co., 2138 American Ave.
Calif., Los Angeles—Bearing Sales Co., 1950 So. Olive St.
Calif., Los Angeles—B. Hayman Co., 3301 Leonis Blvd.
Calif., Los Angeles—Republic Supply Co., 2600 So. Eastland Ave.
Calif., Oakland—Bay City Iron Works, Fourth & Washington St.
Calif., Pomona—Reliable Bearing & Supply Co., 246 So. Towne Ave.
Calif., Redding—Gerlinger Steel & Supply Co., 1527 Sacramento St.
Calif., Sacramento—Capital Machine & Welding Works, 83 No. 17th St.
Calif., San Bernardino—Reliable Bearing & Supply Co., 263 So. E St.
Calif., San Diego—Winn Supply Co., 256 Seventh Ave.
Calif., San Jose—Pacific Hardware & Steel Co., 1344 The Alameda
Calif., Santa Maria — The Bearing House, Pesco Rd.
Calif., Stockton—H. C. Shaw Co., 240 So. Aurora
Calif., Stockton—Guntert & Zimmerman, Inc., P. O. Box 1688
Calif., Ventura—The Bearing House, 1252 No. Ventura Ave.
Colo., Denver—Liebfried Sales Co., 3106 Blake St.
Colo., Denver—Union Supply Co., 1920 Market St.
Idaho, Pocatello—Paul Roberts, 850 So. Main
Idaho, Twin Falls—Paul Roberts
Idaho, Wallace—Bitco, Inc.
New Mex., Albuquerque—Industrial Supply Co., 1647 No. Second St.
New Mex., Carlsbad—Carlsbad Supply Co., 501 Park Dr.
Ore., Baker—Bashe-Sage Hardware Co., 2101 Main St.
Ore., Coos Bay—A. B. Daly, 824 No. Front St.
Ore., Eugene—Harmer Mill & Logging Supply Co., 209 Polk St.
Ore., Klamath Falls—Klamath Machinery Co., 445 Spring St.
Ore., La Grande—Bashe-Sage Hardware Co.
Ore., Ontario—Bashe-Sage Hardware Co.
Ore., Portland—Balzer Machinery Co., 2136 S.E. Eighth Ave.
Ore., Portland—Clyde Equipment Co., 1631 N.W. Thurman St.
Ore., Portland—H. W. Sharp Co., 71 S.W. Oak St.
Ore., Prinville—Prinville Machine & Supply Co., P. O. Box 85
Ore., Roseburg—Industrial Supply Co., 132 So. Stephens
Ore., Salem—Salem Steel & Supply Co., 180 Court St.
Utah, Ogden—Mountain States Implement Co.
Utah, Salt Lake—Cate Equipment Co., 49 E. Ninth South St.
Wash., Aberdeen—Mill & Logging Supply Co., 313 H St.
Wash., Everett—Everett Hardware Co., 2718 Broadway
Wash., Seattle—Washington Belting & Rubber Co., 2761 First Ave. So.
Wash., Spokane—Bitco, Inc., E. 2928 Trento.
Wash., Tacoma—Gerrish Machinery Co., 1101 E. E St.
Wash., Tacoma—Washington Belting & Rubber Co., 672 E. 11th St.
Wash., Walla Walla—Morrison Supply Co., 217 E. Elder St.
Wash., Yakima—Dodge-Yakima Supply Co., 109 So. Front St.

CHAINVEYOR CORP., 5618 E. Washington Blvd., Los Angeles, Calif.

Conveyors (automatic, chain or link, overhead, trolley, combination power and free trolley).

Representatives

Calif., Fresno—Elliott Mfg. Co., 1735 Ventura Ave.
Calif., Los Angeles—M. E. Canfield Co., 419 E. Third St.
Calif., Los Angeles—Mathews Conveyor Co., 5527 Sunset Blvd.
Calif., Modesto—Barker Poultry Equipment Co., 518 So. Hwy. 99.
Calif., San Carlos—Mathews Conveyor Co., 901 County Rd.
Colo., Denver—Hack Engineering Co., 124 Wazee Market
Colo., Denver—Plant Equipment Co., 1863 Wazee St.
Ore., Portland—A. A. Schuler, 1128 S.W. Market St.
Utah, Salt Lake—Equipment Supply Co., 16 Post Office Pl.
Utah, Salt Lake—Industrial Supply Co., 181 Motor Ave.
Wash., Seattle—Howard W. Wylie, 2615 Western Ave.

CHESTER HOIST DIV., NATIONAL SCREW & MFG. CO., P. O. Box 362, Lisbon, Ohio

Hoists (chain, electric, hand, monorail, traveling), Trolleys.

Branches

Calif., Los Angeles—3423 So. Garfield Ave. RA 3-1381
Calif., San Francisco—1 Drumm St. DO 2-3082
Colo., Denver—1863 Wazee St. TA 5-0513
Ore., Portland—3604 S.W. Macadam. BE 2127

CHISHOLM-MOORE HOIST DIV., COLUMBUS McKINNON CHAIN CORP., Fremont Ave., Tonawanda, N. Y.

Cranes (hand power, jib, pillar, swing, bracket, hand power traveling overhead, I beam overhead), Hoists (chain, electric, hand, monorail), Trolleys.

See advertisement on page 99

Branches

Calif., Los Angeles—816 W. Fifth St. MU 6444
Calif., San Francisco—320 Tenth St. UN 1-5255

J. D. CHRISTIAN ENGINEERS, 480 Potrero Ave., San Francisco 10, Calif. HE 1-1300

Chains, Conveyors (apron, automatic, bag and bale, belt, bucket, chain or link, continuous flow, drag flight, foundry, gravity roller, live roller, overhead, pallet, pneumatic, portable, screw, skate, slat, trolley, vertical vibrating, special and other), Cranes (I beam overhead), Elevators (barrel, package, belt, bucket, continuous flow, other), Hoists (bucket, chain, drum, electric, skip), Loaders (portable, self-propelled), Pulleys, Rollers, Winches and Windlasses.

Representatives

Ore., Portland—W. G. Ballantyne Co., 1215 N.W. Everett. AT 4311
Utah, Salt Lake—L. S. Halverson Corr. Works, 232 Lucey Ave. 6-9733

CLARK EQUIPMENT CO., 24th St., Battle Creek, Mich.

Trucks (elevating or lifting, diesel fork, electric fork, gasoline fork, motorized hand, industrial, paper roll, straddle).

Branch

Calif., San Francisco—785 Market St. YU 2-0228

Representatives

Calif., Los Angeles—Robert H. Braun Co., 5519 Jillson St. RA 3-6381
Calif., Oakland—Glen L. Codman Co., 10521 Pearmain St. SW 8-9100
Colo., Denver—John N. Meade Co., 420 U. S. National Bank Bldg. TA 3088
Ore., Portland—Robert Dodd Co., 238 N.E. Oregon St. FI 8491
Utah, Salt Lake—Foulger Equipment Co., 1361 So. Second West. 84-7625
Wash., Seattle—Preston Faller, 1921 Minor Ave. MA 4256

CLEVELAND CRANE & ENGINEERING CO., Wickliffe, Ohio

Conveyors (automatic, foundry, overhead, trolley), Cranes (gantry, hand power, jib, pillar, swing, bracket, double beam overhead, electric and electric traveling overhead, foundry overhead, hand power traveling overhead, I beam overhead, locomotive overhead, monorail overhead), Grabs, Hoists (air, chain, crane, drum, electric, hydraulic, monorail, traveling), Scales (conveyor, monorail), Tractors (monorail), Trolleys.

See advertisement on page 137

Representatives

Calif., Los Angeles—Cleveland Tramrail Calif. Co., 6435 Corvette St. RA 3-5205
Calif., San Francisco — Cleveland Tramrail Calif Co., 870 Market St. EX 7-0737
Colo., Denver—Cleveland Tramrail Denver Co., 1700 15th Ave. MA 3221
Utah, Salt Lake — Cleveland Tramrail Utah Division, 314 Atlas Bldg. 5-8751
Wash., Seattle—Nelson J. Leonard, 5764 28th Ave. N.E. KE 6828

CLIPPER BELT LACER CO., 974 Front Ave., N. W., Grand Rapids 2, Mich.

Belt fasteners, Belt lacings.

Branch

Calif., San Francisco—574 Eddy St. OR 3-2822

Representatives

(Industrial distributors on non-exclusive basis)

CLYDE IRON WORKS, Duluth 1, Minn.

Cranes (gantry), Hoists (crane, derrick, drum, electric, gasoline, hand, portable, skip), Winches and Windlasses.

Representatives

Ariz., Phoenix—State Tractor & Equipment Co., 407 So. 17th Ave. AL 2-1731
Calif., Los Angeles—Harron, Rickard & McCone Co., 3850 Santa Fe Ave. LO 5-8361
Calif., Richmond—Bay Equipment Co., 3254 E. Shore Highway. LA 5-2190
Colo., Denver—Mine & Smelter Supply, 1422 17th St. KE 3111
Idaho, Boise—Intermountain Equipment Co., Broadway at Myrtle. 3-6441
Mont., Billings—Western Construction Equipment Co., 505 No. 24th St. 9-5501
N. Mex., Albuquerque—Harry Cornelius Co., 1510 No. 2nd St. 3-1776
Ore., Portland—Clyde Equipment Co., 1631 N.W. Thurman St. BR 5561
Utah, Salt Lake—Mine & Smelter Supply, 121 W. Second South St.
Wash., Seattle—Clyde Equipment Co., 3410 First Ave. So. MA 1235
Wash., Spokane — Intermountain Equipment Co., E. 611 Sprague Ave. TE 2521

COFFING HOIST DIV., DUFF-NORTON CO., 800 Walter St., Danville, Ill.

Hoists (chain, electric, hand, portable), Trolleys.

Representatives

Calif., Belmont—R. A. Ratcliff, 1300 Sunnyslope Ave. LY 3-6070
Colo., Denver—F. R. Elsner, 842 So. York St. SP 7-5131
(Distributors in all major cities)

COLBY STEEL & MFG., INC., 3155 Elliott Ave., Seattle 5, Wash.

Cranes (gantry, electric and electric traveling overhead, whirley, hammerhead), Elevators (marine, freight), Hoists (electric, gasoline), Ramps, Trucks (elevating or lifting, electric fork, industrial, power-driven lift), Unloaders (grab bucket).

COLES CRANES, INC., P. O. Box 942, Joliet, Ill.

Cranes (yard, truck, tractor).

Representatives

Ariz., Phoenix—Robert H. Braun Co., 2308 So. 11th Ave. AL 3-6185
Calif., Los Angeles—Robert H. Braun Co., 5519 Jillson St. RA 3-6381
Calif., Oakland—Robert H. Griffin Co., 600 16th St. GL 1-3234
Colo., Denver—Woodriff Brothers, 617 Cooper Bldg. TA 2913
Ore., Portland—Air-Mac, Inc., 1435 S.E. Union Ave. FI 6524
Utah, Salt Lake—Equipment Supply Co., 16 Post Office Pl. 3-9074.
Wash., Seattle—Air-Mac, Inc., 3838 Fourth Ave. MU 3388

COLORADO FUEL & IRON CORP., P. O. Box 1920, Denver 2, Colo.

Belting (wire), Conveyors (chain or link), Slings (wire rope), Wire rope.

See advertisement on page 12

Branches

Ariz., Phoenix—305 E. Buchanan. AL 8-5751
Calif., Los Angeles—2444 Saybrook Ave. RA 3-4691
Calif., Oakland—1080 19th Ave. KE 2-2141
Calif., San Francisco—1245 Howard St. MA 1-2869
Colo., Grand Junction—P.O. Box 451
Colo., Pueblo—P.O. Box 316. LI 3-2470
Idaho, Boise—P.O. Box 1552
Mont., Billings—212 Fratt Bldg. 6-6520
Mont., Butte—401 Metals Bank Bldg. Phone 5359
N. Mex., Albuquerque—336 Korber Bldg. 3-5526
Ore., Portland—1350 N.W. Raleigh. AT 7311
Utah, Salt Lake—212 W. 13th South St. 7-5438
Wash., Seattle—3434 Second Ave. So. SE 4881
Wash., Spokane—910 Old National Bank Bldg. MA 1297
Wyo., Casper—666 W. Yellowstone Hwy. 3-5642

COLSON CORP., Cedar and Pine Sts., Elyria, Ohio

Casters, Elevators (barrel, package, portable tiering), Jacks (lift), Stackers (portable electric, portable hand), Tables (elevating, portable), Tractors (gasoline warehouse), Trailers (factory and warehouse), Trucks (bag, barrel, drum, box type, die handling, dolly, elevating or lifting, factory and warehouse, hand, motorized hand, industrial, gasoline lift, hand lift, hand-mechanical lift, hydraulic lift, power-driven lift, packing house, pallet, paper roll, sheet handling, skid handling, electric tiering), Wheels (general industrial, hand truck, rubber tired).

See advertisement on page 87

Representatives

Calif., Los Angeles—Colson Equipment & Supply Co., 1317 Willow St. TR 5743
Calif., Oakland—Colson Equipment & Supply Co., 350 Tenth St. TE 2-3556
Calif., San Francisco—Colson Equipment & Supply Co., 20 Beale St. GA 1-0280
Colo., Denver—Armstrong Caster Co., 465 Santa Fe Dr. AC 3777
Idaho, Boise—R. H. Brown Co., 1503 Main St. Phone 7784
Ore., Portland—R. H. Brown Co., 604 N.W. Sixth Ave. AT 5235
Wash., Seattle—R. H. Brown Co., 502 First Ave. So. SE 0707

COLUMBIA-GENEVA STEEL DIV., UNITED STATES STEEL CORP., Russ Bldg., San Francisco, Calif.

Aerial tramways, Tableways, Light suspension bridges, Wire rope.

See advertisements on pages 37 and 77

Branches

Calif., Los Angeles—2087 E. Slauson Ave. LA 1171
Colo., Denver—First National Bank Bldg. MA 3-2241
Ore., Portland—2345 N.W. Nicolai. CA 9534
Utah, Salt Lake—Walker Bank Bldg. 22-0491
Wash., Seattle—1331 Third Ave. MA 1972

COLUMBUS McKINNON CHAIN CORP. see **CHISHOLM-MOORE HOIST DIVISION**

CONTINENTAL CAN CO., 100 E. 42nd St., New York 17, N. Y.

Barrels (fibre, steel).

Branches

Calif., Los Angeles—1120 Wilshire Blvd.
Calif., San Francisco—Russ Bldg.
Ore., Portland—10200 N. Burgard St.

CONVEYOR CO., 3260 E. Slauson Ave., Los Angeles 58, Calif.

Belting (chain link, composition, conveyor, elevator, wire), Conveyors (apron, automatic, bag and bale, belt, bucket, chain or link, drag, flight, foundry, gravity roller, screw, skate, vibrating), Elevators (belt, bucket, continuous flow), Pulleys (conveyor), Scales (automatic, conveyor), Wheels (conveyor).

Representatives

Ariz., Phoenix—O. S. Stapley Co., 723 Grand Ave. 3-2121
Calif., San Diego — Southern Equipment and Supply Co., 2025 E. Harbor Drive. BE 2-6123
Calif., San Francisco—Tri-Counties Equipment and Implement Co., 575 Berry St. MA 1-3121
Calif., Ukiah—Fullerton Equipment Co., 265 E. Clay St. HO 2-4524
Colo., Denver — McKelvy Machinery Co., 2375 15th St. GE 3338
Idaho, Boise—Starline Equipment Co., 503 S. 16th St. 4-3321
Ore., Portland—Air Mac, Inc., 1435 S.E. Union. FI 6524
Utah, Salt Lake—Foulger Equipment Co., 1361 S. Second W. 84-7625
Wash., Seattle—Air Mac, Inc., 3838 Fourth Ave. So. MU 3388

CONVOY, INC., 3424 Navarre Rd., S. W., Canton 6, Ohio

Baskets (fibre), Boxes (tote).

Representatives

Calif., Los Angeles—H. O. Bishop, 1717 Industrial. VA 5807
Calif., Oakland—E. C. Buehrer, 351 Fifth St. TE 6-2082

CRANE HOIST ENGINEERING CORP., 6515 Salt Lake Ave., Bell, Calif.

Cranes (charging and drawing, gantry, hand power, jib, pillar, swing, bracket, double beam overhead, electric and electric traveling overhead, foundry overhead, hand power traveling overhead, I beam overhead, locomotive overhead, monorail overhead), Hoists (air, bucket, chain, crane, electric, hand, monorail, portable, traveling).

Branch

Calif., Oakland—3637 Adeline St. PI 5-5412

CRANEVEYOR CORP., 1240 S. Boyle Ave., Los Angeles 23, Calif.

Conveyors, Cranes (gantry, hand power, jib, pillar, swing, bracket, double beam overhead, electric overhead, electric traveling, foundry overhead, hand power traveling overhead, I beam overhead, monorail overhead), Hoists (air, chain, crane, electric, hand, monorail, portable, traveling, other), Trolleys.

See advertisement on page 92

Representatives

Ariz., Phoenix — Pratt-Gilbert Hardware Co., P. O. Box 2230. AL 8-6751
Colo., Denver—Mine and Smelter Supply, P. O. Box 5270, Terminal Annex. KE 4-3111
Utah, Salt Lake—Mine and Smelter Supply, 121 W. South Second. Phone 32791

CRESCENT BELT FASTENER CO., 480 Lexington Ave., New York 17, N. Y.

Belt fasteners and belt lacings.

Representatives

(Distributors in all major Western cities).

CULLEN-FRIESTEDT CO., 1300 So. Kilbourn Ave., Chicago 23, Ill.

Grabs.

Representatives

Calif., Los Angeles—J. E. Simkins, 1748 W. 54th St.
Colo., Denver—J. N. Meade, U. S. National Bank Bldg.
Wash., Seattle—H. A. Cheever, 2917 First Ave. So.

CURTIS MFG. CO., 1905 Kienlen Ave., St. Louis 20, Mo.

Hoists (air, hydraulic).

Representatives

Calif., Berkeley—Harry Koses, 3033 San Pablo Ave. AS 3-6726
Calif., Los Angeles—L. L. Meikle, 2844 So. Grand Ave. RI 8-0151
Colo., Denver—E. J. Witulski, 1270 So. Josephine PE 6775
Ore., Portland—O. J. Thomas, 1018 S.E. Eighth Ave. FI 7469

CYCLONE FENCE DEPT., AMERICAN STEEL & WIRE DIV., UNITED STATES STEEL CORP., P. O. Box 260, Waukegan, Ill.

Baskets (wire), Belting (chain link, conveyor, endless, wire), Sprockets (conveyor belt).

Branches

Ariz., Phoenix—4814 No. Central Ave. AM 6-1694
Ariz., Tucson—426 E. Seventh St. 3-4617
Calif., Bakersfield—1407 Chester Ave. FA 5-9262
Calif., Fresno—850 R St. FR 2-8054
Calif., Glendale — 820 Thompson Ave. CH 5-2635
Calif., Oakland—954 60th St. OL 2-2060
Calif., Riverside—3485 Orange St. OV 3-4717
Calif., Sacramento—1331 T St. GI 2-7261
Calif., San Diego—517 Harbor Insur. Blvd. BE 5-3738
Calif., San Francisco—440 Bayshore Blvd. VA 4-1575
Calif., San Jose—460 Park Ave. CY 5-3310
Ore., Portland—400 N. E. 11th Ave. BE 2-8105
Utah, Salt Lake—3075 Main St. 84-6321
Wash., Seattle—1150 Fairview Ave. No. MA 8164
Wash., Spokane—So. 125 Stevens. MA 0421
Wash., Tacoma—911½ Pacific Ave. MA 4551

CYCLOPS IRON WORKS, 837 Folsom St., and 343 Fourth St., San Francisco 7, Calif., DO 2-6100

Cranes (gantry, hand power, jib, pillar, swing, double beam overhead, electric and electric traveling overhead, foundry overhead, hand power traveling overhead, I beam overhead, monorail overhead), Grapples, Hoists (bucket, chain, crane, drum, electric, hand, monorail, traveling, other), Trolleys.

C. R. DANIELS, INC., 549 W. Randolph, Chicago, Ill.

Bags (canvas, shipping), Baskets, Belting (conveyor, fabric, canvas, elevator, endless), Slings (belt, canvas).

Representative

Calif., Los Angeles—Goss-Jewett Co., 4700 E. 48th. LO 5-7192

DARNELL CORP., 12000 Woodruff Ave., Downey, Calif.

Casters, Wheels (general industrial, hand truck, rubber tired, trailer).

See advertisement on page 89

Branch

Calif., San Francisco—681 Market St. SU 1-0413

Representatives

Ariz., Phoenix—Garrett Supply Co., 130 W. Madison St. AL 3-6104
Ariz., Tucson—L. J. Clarke & Co., 1925 Cedar Springs. 4-6233
Calif., Long Beach — American Wholesale Hardware, 1500 W. Anaheim St. 612-61
Calif., Long Beach—Jones Hardware Co., 1501 Santa Fe. 70-8435
Calif., Los Angeles—Andrews Hardware & Metal, 334 So. Main St. MU 6111
Calif., Los Angeles—W. T. Billard, Inc., 734 E. Third St. MU 8800
Calif., Los Angeles—Colson Equipment & Supply Co., 1317 Willow St. TR 5743
Calif., Los Angeles—Pacific Mill & Mine Supply, 2338 E. Eighth St. TR 7501
Calif., Los Angeles—Union Hardware & Metal Co., 5555 Ferguson Dr. RA 3-2411
Calif., Los Angeles—Warren & Bailey Co., 3522 Garfield Ave. RA 3-7181.
Calif., Los Angeles—Yaeger & Sons, 1512 E. Olympic. TR 3576
Calif., San Bernardino—Reliable Bearing & Supply Co., 263 So. E St. 8-6565.
Calif., San Diego—Mission Pipe & Supply Co., 200 Ninth St. BE 3-6633
Calif., San Diego—Warren & Bailey Co., 266 Seventh Ave. BE 35-4976
Calif., San Francisco—Colson Equipment & Supply Co., 20 Beale St. GA 1-0280
Calif., San Francisco—Elder & Co., 390 Seventh St. UN 1-5480
Calif., San Francisco—Warren & Bailey Co., 198 Second St. EX 2-6240
Calif., Santa Ana—Mission Pipe & Supply Co., 615 E. Washington Ave. KI 2-8871
Colo., Denver—Murray Sales Co., 16 Wazee Market. KE 4-5296
Mont., Billings—Bearings Supply Co., 15 No. 31st St. 9-1195
Nev., Las Vegas—Vegas Material Co., 1025 So. Main St. 2019

N. Mex., Albuquerque—Safway Steel Scaffold Co., 2702 Vista Larga Ave. N.E. 6-1713
Ore., Portland—F. E. Bennett Co., 426 N.W. Sixth Ave. AT 2321
Utah, Salt Lake—Webb Co., 3341 So. 1940 East 84-4811
Wash., Seattle—J. W. Ralston Co., 1401 W. Garfield. AL 8383
Wash., Spokane—Standard Cycle & Supply Co., 1811 E. Sprague Ave. LA 1321

DAYBROOK HYDRAULIC DIV., L. A. YOUNG SPRING & WIRE CORP., 500 Lehman Ave., Bowling Green, Ohio
Hoists (hydraulic), Loaders (tailgate).
Representatives
Ariz., Phoenix—Superior Coach Sales & Service, 2928 E. Washington St. BR 5-5779
Calif., Berkeley—Work Hoist & Body Corp., 2817 Seventh St. TH 5-1900
Calif., Fresno—Utility Trailer Sales Co., So. Hwy. 99 at Orange Ave. 2-2131
Calif., Maywood—Western Body & Hoist Co., 5729 Maywood Ave. LO 8-3295
Colo., Denver—Timpte Brothers, Inc., 40th Ave. at York St. CH 4-6686
N. Mex., Albuquerque—Timpte Brothers, Inc., 4300 Second N. W. 4-3444
Ore., Portland—Utility Trailer & Equipment, 4771 S. E. 17th St. EM 4621
Wash., Seattle—Utility Trailer & Equipment, 3400 Sixth Ave. So. MU 2226
Wash., Spokane—Spokane Machinery Co., 3626 Trent Ave. LA 2621

THE DAY CO., 810 Third Ave. N. E., Minneapolis 13, Minn.
Bins (bulk storage), Conveyors (pneumatic), Elevators (bucket).
Representatives
Calif., Los Angeles—Milton J. Adamson, 714 W. Olympic Blvd. AR 3-4758
Calif., San Francisco—John H. Schmidt, 420 Market St. YU 2-7058
Colo., Denver—Alldredge & McCabe, 847 17th Ave. AL 5-7496
Idaho, Twin Falls—C. K. Brown, 401 Shoshone St. So. Phone 2150
Wash., Seattle—Fairman B. Lee Co., 219 Central Bldg. EL 3582

DEERE & CO., 3300 River Dr., Moline, Ill.
Cranes (yard, truck tractor), Loaders (portable, self-propelled), Tractors (gasoline warehouse, gasoline crawler), Trailers (tractor, rubber tired).
Branches
Calif., San Francisco—651 Brannan St.
Ore., Portland—215 S.E. Morrison St.
Utah, Salt Lake—1841 W. 1700 South

L. P. DEGEN BELTING CO., 260 Mission St., San Francisco 5, Calif. EX 2-3820
Belting, Belt fasteners and belt lacings, Chains, Conveyors (belt, bucket), Rear axle truck seals, Hydraulic packings and seals (for jacks, trucks, hoists, etc.).
Representatives
Calif., Burlingame—James Shaw, 1323 Carlos Ave. DI 4-0924
Calif., Los Angeles—Don Smith Co., 3219 So. Figueroa. PR 0263
Calif., San Leandro—E. J. Dunlap, 638 Douglas Dr. LO 8-1623

THE DEMING CO., Salem, Ohio
Pumps.

DEMPSTER BROTHERS, INC., Springdale Ave. & Southern Railroad, Knoxville, Tenn.
System consisting of truck-mounted unit handling many types and sizes of containers.

See advertisement on pages 8 and 9

Representatives
Ariz., Phoenix—Mr. Melvin Wright, 2747 E. Indian School Rd. CR 4-0345
Calif., Pasadena—C. Harold Sebenius Co., 234 Colorado St. RY 1-8891
Calif., San Francisco—Schultz Materials Handling Corp., 1425 Illinois St. MI 7-8188
Wash., Bellevue—H. E. Simi, P. O. Box 181. 2, Box 2964. OL 6411

DIAMOND CHAIN CO., 402 Kentucky Ave., Indianapolis 7, Ind.
Chains (roller), Conveyors (chain), Sprockets.

See advertisement on page 27

Branches
Calif., Los Angeles—900 Santa Fe Ave. VA 1723
Calif., Menlo Park—1090 El Camino Real. DA 3-4940
Representatives
Ariz., Phoenix—Semon Bearing & Supply, 325 No. Third Ave. AL-8-7566
Ariz., Tucson—Tucson Bearing Co., 527 No. Stone Ave. 2-6512
Calif., Bakersfield—Power Transmission Equipment, 109 23rd St. 5-8601
Calif., Fresno—Pacific Mill & Mine Supply, 530 Van Ness Ave. 4-5924
Calif., Los Angeles—Degen-Fiege Co., 1733 E. 15th St. RE 2281
Calif., Sacramento—Western Industrial Supply Co., 905 G St. 2-7264
Calif., San Diego—Hudson Equipment Co., 629 First Ave. BE 9-5171
Calif., San Francisco—Horsford Bros., 944 Folsom St., SU 1-0657
Calif., San Francisco—Monarch Supply Co., 277 Pennsylvania Ave. UN 3-1740
Calif., Santa Clara—Monarch Supply Co., 2455 Alameda. AX 6-1025
Calif., South Gate—Power Transmission Equipment Co., 4501 Firestone Blvd. LO 5-8391
Calif., Stockton—Hickinbotham Bros., Ltd., 536 So. Aurora St. HO 6-9541
Colo., Denver—Colorado Bearings Co., 1618 Wazee St. MA 3-1218
Idaho, Boise—Idaho Chain & Sprocket, 2400 Warm Springs Ave. 3-8392
Idaho, Pocatello—Pocatello Chain & Sprockets, Inc., 701 First Ave. So. Phone 5401
Montana, Billings—Power Transmission Equipment Co., 15 No. 33rd St. 4-4185
N. Mex., Albuquerque—Harry Cornelius Co., 1510 Second St. N.W. 3-1776
Ore., Eugene—Woodbury Eugene, 265 Eighth Ave. W. 5-4374
Ore., Medford—Woodbury Medford, 703 Grape St. 3-3661
Ore., Portland—Woodbury & Co., 133 S. W. Second Ave. AT 6641
Utah, Salt Lake—Utah Sprocket & Machinery Co., 717 So. Fourth West. 5-8811
Wash., Everett—Washington Belting & Rubber Co., 2923 Grand Ave. CE 3111
Wash., Seattle—Washington Belting & Rubber Co., 2763 First Ave. So. EL 5650
Wash., Tacoma—Washington Belting & Rubber Co., 672 E. 11th St. MA 8158

R & J DICK CO., P. O. Box 388, Passaic, N. J.
Belting, Belt fasteners and belt lacings, Chains, Pulleys.

See advertisement on page 157

Branches
Calif., Maywood—5276 Atlantic Blvd. LO 8-4014
Calif., San Francisco—510 Bryant St. SU 1-1341
Wash., Seattle—307 Maritime Bldg. MU 1922
Representative
(Contact any of the three branches for name of nearest distributor.)

W. C. DILLON & CO., 14620 Keswick St., Van Nuys, Calif.
Overload signals (hoist, crane), Scales (automatic, portable, warehouse).

DINGS MAGNETIC SEPARATOR CO., 4740 W. Electric Ave., Milwaukee 46, Wisc.
Magnets, Pulleys.
Branches
Calif., Los Angeles—2112 So. Atlantic Blvd. AN 9-7804
Calif., San Francisco—420 Market St. YU 2-7120
Ore., Portland—P. O. Box 5232. KE 6818
Utah, Salt Lake—545 W. Eighth South St. 9-8731

DIVINE BROTHERS CO., 200 Seward Ave., Utica 1, N. Y.
Casters, Wheels (general industrial, hand truck, rubber tired, trailer).
Representatives
Calif., Los Angeles—Utilities Supply Co., 1736 E. 15th St. PR 3178
Colo., Denver—Hahn Equipment Co., 1745 Blake St. KE 4-5500
Ore., Portland—Oregon Handling Equipment, 2949 St. Helens Rd. AT 5792
Utah, Salt Lake—Modern Equipment Co., 52 W. Second South St. 9-2171
Wash., Seattle—J. W. Ralston Co., 1401 W. Garfield. AL 8383

DODGE MFG. CORP., Mishawaka, Ind.
Pulleys (conveyor, other), Speed reducers, Pillow block bearings, V-belt drives, Chain drives.
Representatives
Calif., Pasadena—R. C. Kingsbury, 1885 E. Mountain St. RY 1-9414
Calif., San Francisco—L. O. Carroll, 55 New Montgomery St. DO 2-8434
Colo., Denver—D. M. Leckey, 2960 Hudson St. DU 8-2259
Ore., Portland—M. M. Studebaker, 2441 N.E. 61st Ave. MU 2593

CHAS. WM. DOEPKE MFG. CO., 8913 Blue Ash Rd., Rossmoyne, Ohio
Baskets (metal), Bins, Boxes (tote), Racks (tote box).
Representatives
Ariz., Phoenix—E. D. Flournoy Co., 420 So. Third St., AL 2-8607
Calif., Los Angeles—M. E. Canfield Co., 419 E. Third St. MA 6-6606
Calif., San Francisco—Hamerslag Equipment Co., 45 Elmira St. JU 7-1357
Colo., Denver—Murray Sales Co., 16 Wazee Market KE 4-5296
N. Mex., Albuquerque—E. D. Flournoy Co., 217 Sixth St., S.W. 3-1055.
Ore., Portland—Air-Mac, Inc., 1435 S.E. Union Ave. FI 6524
Utah, Salt Lake—Modern Equipment Co., 52 W. Second South St. 9-2171
Wash., Seattle—Air-Mac, Inc., 3838 Fourth Ave. So. MU 3388
Wash., Spokane—Air-Mac, Inc., P. O. Box 1125
Wash., Yakima—Air-Mac, Inc., 313 No. Grandview

DOWNS CRANE & HOIST CO., 540 W. Vernon Ave., Los Angeles 37, Calif.
Cranes (gantry, hand power, jib, pillar, swing bracket, double beam overhead, electric traveling overhead, hand power traveling overhead, I beam overhead), Grabs, Grapples, Hoists (crane, derrick, drum, electric, skip, traveling, other), Slings (belt, canvas, chain, rope, wire rope, other), Tongs, Trolleys, Cranewheels, Winches and Windlasses.

See advertisement on page 94

DROTT MFG. CO., 3841 W. Wisconsin Ave., Milwaukee, Wisc.
Loaders (self-propelled).
Representatives
(Distribution through International Harvester Co. industrial distributors)

DUCT-O-WIRE CO., Box 28, Huntington Park, Calif.
Electric crane and monorail conductor systems

See advertisement on page 161

Representatives
Calif., Bell (Los Angeles)—Crane Hoist Engineering Corp., 6515 Salt Lake Ave. LO 5-6255
Calif., Oakland — Crane Hoist Engineering Corp., 3637 Adeline St. PI 5-5412

DUFF CALIFORNIA CO., 100 Bush St., San Francisco, Calif.
Barrels for shipping (wood), Boxes for shipping (wire bound, wood), Pallets.
Branch
Calif., Los Angeles—2581 E. Eighth St. AN 1-4161
Representative
Utah, Salt Lake—Robinson Diehl Co., Dooley Bldg. 3-5962

DUFF-NORTON CO., 2709 Preble Ave., Pittsburgh 30, Pa.
Jacks (hydraulic, lift, screw, others).
Representative
Calif., San Francisco—M. C. Dillingham, 1016 Howard St. HE 1-4755

DUFF-NORTON CO., see **COFFING HOIST DIVISION**

ECONOMY ENGINEERING CO., 4501-23 W. Lake St., Chicago 24, Ill.
Elevators (portable tiering), Stackers (electric portable, hand portable), Tables (elevating), Trucks (bag, barrel, drum, die handling, elevating or lifting, electric fork, industrial, straddle, electric tiering).
Representatives
Calif., Los Angeles—McKinley Equipment Corp., 1003 So. Santa Fe Ave. MA 6-5651
Calif., San Francisco—Hamerslag Equipment Co., 45 Elmira St. JU 7-1357
N. Mex., Albuquerque—E. D. Flournoy Co., 217 Sixth St. S. W.
Ore., Portland—George Easton, 1001 S. E. Morrison. FI 2083
Wash., Seattle—Hallidie Machinery Co., 210 Hudson St. LA 9520

EDERER ENGINEERING CO., 2935 First Ave. So., Seattle 4, Wash.
Cranes (gantry, hand power, jib, pillar, swing, double beam overhead, foundry overhead, hand powered overhead, I beam overhead, locomotive overhead, monorail overhead), Grapples, Hoists, (crane, drum, electric, monorail, traveling) and Trolleys

THOMAS A. EDISON, INC., EDISON STORAGE BATTERY DIV., West Orange, N. J.
Storage batteries.
Branches
Calif., Los Angeles—5225 Wilshire Blvd. WE 8-8090
Calif., San Francisco—1174 Howard St. HE 1-0322
Utah, Salt Lake—2070 Belmont Dr. 3-4501
Wash., Seattle—310 Ninth Ave. No. MA 1988

E. H. EDWARDS CO., Butler Rd. & Industrial Way, P. O. Box 513, South San Francisco, Calif. PL 6-2115
Slings (wire rope), Wire rope.
Branches
Calif., Los Angeles—2600 So. Eastland Ave. RA 3-3257
Ore., Portland—2690 N. W. Nicolai St. BE 7351
Wash., Seattle—1044 Sixth Ave. So. MA 2218

EIMCO CORP., 634 So. Fourth West, Salt Lake City 10, Utah
Loaders, Tractors.
Branches
Calif., Berkeley—637 Cedar St. LA 6-6884
Calif., Pasadena—434 No. Lake Ave. RY 1-5740
Idaho, Kellogg—P. O. Box 998 KE 3001
Texas, El Paso—Mills Bldg. 3-1041
Wash., Seattle—208 Hoge Bldg. MU 5084
Representatives
Colo., Grand Junction—S & M Supply Co., 735 Fourth Ave. Phone 2966
Ore., Portland—Balzer Machinery Co., 2136 S. E. Eighth Ave. EA 2143
Wash., Seattle—Bow Lake Equipment Co., 300 Michigan. RA 7734

ELECTRIC CONTROLLER & MFG. CO., 4500 Lee Road, Cleveland 28, Ohio
Magnets
Branches
Calif., Los Angeles—6066 E. Olympic Blvd. RA 3-4121
Calif., San Carlos—530 El Camino Real. LY 1-0754
Representatives
Colo., Denver—H. C. Guire, 715 So. York St.. SP 7-2864
Ore., Portland—Shaffer & Nelson, 139 S. E. Taylor. FI 7437
Utah, Salt Lake—Riter Engineering, Kearns Bldg. 3-7933
Wash., Seattle—Shaffer & Nelson, 312 Occidental Ave. MU 0186
Wash., Spokane—Shaffer & Nelson, N. 2205 Monroe St. EM 6664

ELECTRIC STEEL FOUNDRY CO., 2141 N. W. 25th, Portland 10, Ore.
Chains, Conveyors (chain or link, continuous flow, drag and flight), Grapples, Wire rope, Dragline buckets, Shovel dippers, Two-piece bucket and dipper teeth, Cutting edges, Wire rope fittings, Stainless steel castings, Manganese alloy steel castings, Stainless pipe, tube, fittings.
Branches
Calif., Emeryville—1280 65th St. OL 4-2732
Calif., Los Angeles—4600 Pacific Blvd. LU 1-7251
Ore., Eugene—1464 W. Sixth St. 4-6171
Utah, Salt Lake—P.O. Box 1379. Phone 8-0803
Wash., Seattle—1131 W. Hanford St. EL 4161
Wash., Spokane—N. 1327 Washington St. FA 4507

ELECTRIC STORAGE BATTERY CO. see **EXIDE INDUSTRIAL DIV.**

ELECTRO LIFT, INC., 204 Sargeant Ave., Clifton, N. J.
Hoists (drum, electric, monorail, portable, traveling, other).

See advertisement on page 154

Representative
Calif., Los Angeles—Irving G. King & Co., 821 Mateo St.

ELWELL-PARKER ELECTRIC CO., 4509 St. Clair Ave., Cleveland 3, Ohio
Tractors (electric warehouse), Trucks (bag, barrel, drum, die handling, elevating or lifting, factory and warehouse, electric fork, industrial, gasoline lift, hydraulic lift, power-driven lift, packing house, paper roll, sheet handling, skid handling, electric tiering, other).

See advertisement on page 92

Representatives
Calif., Los Angeles—J. W. Lafferty Co., 5422 E. Washington Blvd. RA 3-5233
Calif., San Francisco—Ira G. Perin Co., 575 Howard St. GA 1-1827
Colo., Denver—Landes, Zachary & Peterson, 2500 W. Seventh St. MA 3-6203
Wash., Seattle—Colby Steel & Mfg. Co., 3155 Elliott Ave. AL 0570

ENGINEERING PRODUCTS CO., 1600 So. San Pedro St., Los Angeles 15, Calif.
Hoists (air, hydraulic), Trucks (dolly, electric fork, hand, industrial, hand lift, hydraulic lift, pallet) Winches and Windlasses.

EQUIPMENT ENGINEERING SERVICES, 672 So. Lafayette Park Pl., Los Angeles 57, Calif. DU-7-8521
Bags (canvas), Baskets (wire, plastic), Tote boxes (plastic), Carts, (tote box), Racks (pallet, storage, other).

EQUIPTO DIV., AURORA EQUIPMENT CO., 422 Cleveland, Aurora, Ill.
Bins, Carts (hand, push, other), Racks (storage), Trucks (hand).
Branches
Calif., Los Angeles—2501 Yates. RA 3-4529
Calif., San Francisco—2166 Market St. KL 2-2958
Colo., Denver—1126 12th St. KE 4-8857
Ore., Portland—6635 N.E. Hancock.
Wash., Seattle—4310 Roosevelt Way. ME 6828

ERIEZ MFG. CO., 212 Magnet Dr., Erie, Pa.
Magnets
Representatives
Calif., Los Angeles—E. M. Underwood & Co., 3319 Beverly Blvd. DU 2-1375
Calif., San Francisco—Dick Dietrich Associates, 1355 Market St. KL 2-3611
Calif., San Francisco—Power-Mac Corp., 467 So. Van Ness Ave. UN 1-1430
Colo., Denver—Alldredge & McCabe, 847 E. 17th Ave. AL 5-7496
Idaho, Twin Falls—C. K. Brown & Associates, 401 Shoshone St. So. Phone 2150
Wash., Seattle—Fred G. Greaves Co., 3215 Western Ave. AL 5111

EUCLID CRANE & HOIST CO., 1365 Chardon Rd., Cleveland, Ohio.
Cranes (gantry, hand power, jib, pillar, swing, bracket, double beam overhead, electric and electric traveling overhead, hand power traveling overhead, 1 beam overhead), Hoists (bucket, crane, electric).
Representatives
Calif., Los Angeles—Apex Steel Corp., 6920 E. Slauson Ave. RA 3-1191
Ore., Portland—Masters & Co., 903 Terminal Sales Bldg. CA 9338
Wash., Seattle—Equipment Supplies, Inc., 528 First Ave. So. EL 1219

EXACT WEIGHT SCALE CO., 944 W. Fifth Ave., Columbus 8, Ohio
Scales (automatic, counting, packaging, portable, other).
Branches
Calif., Los Angeles—P. O. Box 36374, Wilshire La Brea. WE 1-8487
Calif., San Francisco—236 Fremont St. GA 1-7007
Colo., Denver—1540 Wazee St. AC 2-5651
Utah, Salt Lake—45 So. Third West St. 3-1863
Wash., Seattle—3222 Western Ave. GA 8660

EXIDE INDUSTRIAL DIV., THE ELECTRIC STORAGE BATTERY CO., 42 So. 15th St., Philadelphia 2, Pa.
Batteries
Branches
Calif., Los Angeles—1043 So. Grand Ave. PR 4436
Calif., San Francisco—6150 Third St. MI 7-3100
Colo., Denver—810 14th St. MA 3-7793
Wash., Seattle—1919 Smith Tower. EL 1377

F. A. B. MFG. CO., 1249 67th St., Oakland 8, Calif.
Axles (truck, trailer), Trailers (motor truck and tractor), Trucks (motor).
Representatives
Ariz., Phoenix—Welch Mfg. Co., 533 W. Jefferson St. 3-3002
Calif., Los Angeles—Lambert Co., 1202 E. Olympic Blvd. MA 6-9581
Colo., Denver—Woeber Auto Body & Mfg. Co., 4950 Jackson St. FL 2366
Idaho, Boise—Boise-White Truck & Equipment Co., 914 Royal Ave. Phone 2-3666
Mont., Great Falls—Erwin H. Johnson, Inc., 1020 Third St. N. W. Phone 6-6662
N. Mex., Albuquerque—Winter-Weiss Co., 6130 No. Second St. 4-3421
Ore., Portland—Rudy Yost Equipment Co., 8603 S. E. McLoughlin Blvd. BE 3317
Utah, Salt Lake—Williamsen's, Inc., 1103 So. Sixth St. 22-5658
Wash., Seattle—Truck Welding & Equipment Co., 737 Ninth Ave. No. EL 1172
Wash., Spokane—American Machine Co., W. 1026 Broadway. FA 2591

FAB-WELD CORP., 3650 Richmond St., Philadelphia 34, Pa.
Bins, Boxes for shipping, Casters, Dock boards, Pallets, Racks (pallet, storage), Ramps, Trailers (factory and warehouse), Trucks (bag, barrel, drum, box type, die handling, dolly, factory and warehouse, hand, hand lift, packing house, pallet, paper roll, sheet handling, skid handling).
Representatives
Calif., Los Angeles—James P. Kinney Co., 5141 Telegraph Rd. AN 9-7411
Calif., San Jose—Industrial Tool & Supply Co., 2314 Stevens Creek Rd. CY 2-8853
Colo., Denver—Woodriff Brothers, 617 Cooper Bldg.
Wash., Seattle—B & L Sales, 5245 Pullman Ave.

THE FAIRBANKS CO., 393 Lafayette St., New York 3, N. Y.
Carts (push), Casters, Trailers (factory and warehouse), Trucks (bag, barrel, drum, dolly, elevating or lifting, factory and warehouse, hand, paper roll), Wheels (general industrial, hand truck, rubber tired, trailer).

See advertisement on page 85

Representative
Calif., Beverly Hills—Albert Tuch & Associates, 468 So. Spaulding Dr. BR 2-5974

FAIRBANKS, MORSE & CO., 600 So. Michigan Ave., Chicago 5, Ill.
Pumps, Scales (automatic, conveyor, counting, monorail, packaging, portable, warehouse).

Branches
Calif., Los Angeles—4535 So. Soto St. JE 8151
Ore., Portland—105 S. E. Taylor St. EA 0131
Wash., Seattle—668 Lane St. MU 3450

FAIRFIELD ENGINEERING CO., 324 Barnhart St., Marion, Ohio
Conveyors (apron, automatic, bag, bale, belt, bucket, chain or link, continuous flow, drag, flight, foundry, gravity roll, live roller, portable, screw, slat, vertical, vibrating, special and other), Elevators (barrel, package, belt, bucket, continuous flow).

Representatives
Calif., South Gate—Cost Reduction Equipment Co., 5200 Chakemco. LO 0-7807
Colo., Denver—Hank Thurstin Co., 475 Acoma St. RA 2-4689

FARGO RUBBER CORP., 137 E. 58th St., Los Angeles, Calif.
Tires (industrial truck and trailer), Wheels (general industrial, hand truck, rubber tired).

FAULTLESS CASTER CORP., 1521 No. Garvin, Evansville, Ind.
Casters, Wheels (rubber tired).

Branch
Calif., Los Angeles—1252 So. Boyle. AN 7243

Representatives
Calif., Los Angeles—Garrett Supply Co., 3844 So. Santa Fe Ave. KI 7221
Calif., San Francisco—C. W. Marwedel, 1235 Mission St. UN 1-2125
Colo., Denver—Armstrong Caster Co., 465 Santa Fe Dr. AC 3777
Ore., Portland—John Negus Co., 3005 N. E. Sandy Blvd. GA 7296
Wash., Seattle—John Negus Co., 1016 First Ave. EL 5006

FEEDRAIL CORP., 125 Barclay St., New York 7, N. Y.
Electrification systems, Trolley busway systems.

Representatives
Calif., Los Angeles—Allied Industries, 412 Seaton St. MU 2244
Calif., San Francisco—Eichorn & Melchior, 500 Minnesota St. UN 1-8309
Colo., Denver—Styco Sales Agencies, 12 E. 20th Ave. CH 4-3269
Wash., Seattle—E. A. Will, 534 First Ave. So. EL 2716

HARRY J. FERGUSON CO., 115 West Ave., Jenkintown, Pa.
Conveyors (belt, chain or link, gravity roller, live roller, pallet, portable, skate, slat), Rollers (conveyor), Wheels (conveyor).

Representatives
Calif., Los Angeles—W. T. Billard Co., 734 E. Third St.
Calif., San Francisco—R. M. Taylor Co., 268 Market St.
Ore., Portland—Charles H. Day Co., 225 S.W. First Ave.
Utah, Salt Lake—Equipment Supply, 16 Post-office Place.
Wash., Seattle—Air-Mac Equipment Co., 3838 Fourth Ave. So.

FETTERMAN-COLFAX CO., 1420 Fifth Ave., Spokane 31, Wash.
Belting (conveyor, fabric, canvas, elevator), Carts (hand, push), Conveyors (bag and bale, belt, bucket, chain or link, continuous flow, drag, flight, foundry, gravity roller, live roller, portable, screw, skate, slat, vertical), Elevators (belt, bucket, continuous flow), Loaders (portable, self-propelled), Pulleys (conveyor), Rollers (conveyor), Stackers (portable electric), Tables (conveying), Trucks (bag, barrel, drum, box type, hand), Wheels (conveyor), Dumpers (seed box, hand, power).

FIBREBOARD PRODUCTS INC., 1789 Montgomery St., San Francisco 11, Calif. DO 2-6900
Shipping boxes

Branches
Calif., Fresno—64 N. Fulton St. 2-2119
Calif., Oakland—922 Latham Square Bldg. TE 2-5621
Calif., Sacramento—2008 28th St. HI 7-5733
Calif., Salinas—133 W. Alisal St. Phone 8079
Calif., San Jose—819 Bank of America Bldg. CY 3-8343
Calif., Stockton—W. Church St. HO 4-2837
Colo., Denver—2525 S. Delaware St. AL 8238
Idaho, Boise—346 Sonna Bldg. 4-3842
Mont., Billings—111 No. 30th St. 2-3075
Utah, Salt Lake—405 Tribune Telegram Bldg. 4-7721

FLATON MACHINE WORKS, Broadway & West Primm Sts., St. Louis 11, Mo.
Safety clutches

Representatives
Calif., Los Angeles—Davis Material Handling Co., 5649 Alhambra Ave. CA 2-7197
Calif., Oakland—Edward L. Parsons, 600 Sixteenth St. TW 3-1577
Wash., Seattle—Berg-Evans Transmission Co., 616 Sixth Ave. So. EL 5092

FLEXIBLE STEEL LACING CO., 4607 Lexington St., Chicago 44, Ill.
Belt fasteners and belt lacings.

See advertisement on page 140

Representatives
Calif., Long Beach—Newton Crum, 5621 The Toledo
Wash., Seattle—John Marshall, 10146 Holman Rd.

FLEXOVEYOR MFG. CO., 1220 So. Acoma St., Denver 23, Colo. RA 2-0805
Bag flatteners, Conveyors (automatic, bag and bale, belt, pallet, portable, special and other), Elevators (barrel, package, other), Loaders (box car, truck, portable, self-propelled).

FLINTKOTE CO., 5500 So. Alameda St., Los Angeles, Calif. LO 8-3011
Boxes for shipping (corrugated and fibre), Folding cartons.

Branches
Calif., Fresno—444 Blackstone. HI 4-0284
Calif., San Jose—1642 Shasta Ave. CY 5-5426
Calif., San Leandro—2000 First Ave. LO 2-2772

FOOD MACHINERY & CHEMICAL CORP., PACKING EQUIPMENT DIV. 3075 14th St., Riverside, Calif.
Belting (conveyor), Conveyors (automatic, bag and bale, belt, chain or link, continuous flow, flight, gravity roller, live roller, overhead, pallet, portable, skate, slat, trolley, vibrating, special and other), Nailing machines (box and pallet making), Palletizer (automatic), Counters (recording), Rollers (conveyor), Trucks (bulk grain handling, hand, packing house), Wheels (conveyor, hand truck, rubber tired).

Branches
Ariz., Phoenix—1450 E. Henshaw Rd. AL 4-7118
Calif., El Centro—1212 No. Imperial Ave. EL 2-3686
Calif., Fullerton—320 E. Santa Fe. LA 5-4723
Calif., Lindsay—124 W. Apia St. 2-2508
Calif., Lodi—32 So. Main St. 9-2196
Calif., Los Altos—11320 Entrada Pl. WH 8-5218
Calif., Los Angeles—5312 Pacific Blvd. LU 8-1386
Calif., Salinas—761 Sanborn Rd. 2-3651
Calif., Santa Paula—1409 E. Main St. Phone 1560
Calif., Stockton—P. O. Box 1347

FOOD MACHINERY AND CHEMICAL CORP., see **JOHN BEAN DIV.**

THE FORKER CORP. see **OHIO TRAM-RAIL DIV.**

FORT WORTH STEEL & MACHINERY CO., 3600 McCart St., Fort Worth, Texas
Conveyors (screw, vertical), Elevators (bucket), Pulleys (conveyor).

Branches
Calif., Los Angeles—3026 E. Olympic Blvd. AN 3-6128
Calif., San Francisco — 248 Ninth St. UN 3-3037
Colo., Denver—4975 Jackson St. FL 5-2294

Representatives
Ariz., Nogales—Occidental Electric Co.
Ariz., Yuma—Sturgess Implement Co., 355 Eighth St.
Calif., Arcata—Munnell & Sherrill, 1041 F St.
Calif., Bakersfield—Gordon's Industrial Supply Co., 131 First St.
Calif., Colton—Valley Industrial Supply Co., 401 So. Eighth St.
Calif., Corcoran—Sawtelle & Rosprim, P. O. Box 938
Calif., El Centro—W. H. Douthitt Steel & Supply Co., Route 1, Box 183
Calif., El Centro—Winn Supply Co., 1562 San Diego Hwy.
Calif., Fresno—George M. Philpott Co., 2376 So. Railroad Ave.
Calif., Fresno—Pacific Mill & Mine Supply Co., 530 Van Ness Ave.
Calif., Fresno—Murray Co., 3822 So. Maple Ave.
Calif., Fresno—Elliott Mfg. Co., 1735 Ventura Ave.
Calif., Long Beach—Bay City Bearing Co., 2138 American Ave.
Calif., Los Angeles—C. R. Davis Co., 422 E. Third St.
Calif., Los Angeles—Pacific Mill & Mine Supply Co., 2338 E. Eighth St.
Calif., Los Angeles—Sierra Industries, Inc., 935 So. Santa Fe Ave.
Calif., Los Angeles—Western Belting & Mechanicals, Inc., 3525 E. Emerey St.
Calif., Madera—Thompson & Gill, Inc., Drawer 720
Calif., Modesto—Girardi Bearing Co., 717 Eye St.
Calif., Oakland—Adam-Hill Co., 7501 San Leandro Blvd.
Calif., Oakland—George M. Philpott Co., 2928 Poplar St.
Calif., Ontario—Valley Industrial Supply Co., 1170 W. A St.
Calif., Sacramento—George M. Philpott Co., 1725 33rd St.
Calif., Salinas—Girardi Bearing Co., 257 John St.
Calif., San Diego—Winn Supply Co., 256 Seventh St.
Calif., San Francisco—George M. Philpott Co., 1060 Bryant St.
Calif., San Francisco—Adam Hill Co., 244 Ninth St.
Calif., San Jose—Orchard Supply Co., 720 San Carlos St.
Calif., Santa Rosa—Santa Rosa Bearing Co., 622 Johnson St.
Calif., Stockton—Girardi Bearing Co., 148 E. Miner Ave.
Calif., Ukiah—Munnell & Sherrill, No. Hwy. 101
Calif., Yuba City—Schmidt Pump House & Machine Shop, 720 Bridge St.
Nev., Reno—Sierra Machinery Co., 307 Morrill Ave.
Ore., Portland—J. J. Ross Mill Furnishing Co.
Ore., Portland—Power Transmission Products, 1107 N.W. 14th Ave.

FRENCH & HECHT DIV., KELSEY-HAYES WHEEL CO., Third and Farnam Sts., Davenport, Iowa
Axles (truck, trailer, other), Carts (hand, other), Trailers (factory and warehouse, hand), Trucks (factory and warehouse), Wheels (general industrial, hand truck, rubber tired, tractor, trailer).

Representatives
Calif., Los Angeles — Motor Rim & Wheel Service, 2860 E. Pico. AN 9-7561
Calif., San Francisco — Motor Rim & Wheel Service, 3075 17th St. UN 3-2590
Colo., Denver—Quinn & McGill Motor Supply, 437 Broadway. SP 7-4431
Ore., Portland—Auto Wheel Service, 330 N.W. Tenth Ave. AT 9346

Utah, Salt Lake — Henderson Rim & Wheel Service, 32 E. Fifth South. 3-6746
Wash., Spokane—Bearing & Rim Supply Co., W. 1202 Second. MA 2185

FULLER CO., Catasauqua, Pa.
Conveyors (pneumatic).
Branches
Calif., Los Angeles—5225 Wilshire Blvd. WE 2-5024
Calif., San Francisco—564 Market St. 6-5487
Wash., Seattle—120 Sixth Ave. No. MU 3131

ROBERT GAIR CO., 155 E. 44th St., New York 17, N. Y.
Baskets (fibre), Shipping boxes (corrugated and fibre), Tote boxes.
Branch
Calif., Los Angeles—5120 So. Soto St. LO 8-1811

GAR-BRO MFG. CO., 2415 E. Washington Blvd., Los Angeles 21, Calif.
Bins, Carts, (hand, push, other), Trailers, Trucks (dolly, factory and warehouse, hand, motorized hand), Wheels (general industrial, rubber tired).

See advertisement on page 154

Representatives
Calif., Los Angeles—Garlinghouse Bros., 2415 E. Washington Blvd. LU 7-5291
Calif., San Francisco—Edw. R. Bacon Co., 17th and Folsom. HE 1-3700
Ore., Portland—Loggers & Contractors Machinery Co., 240 So. Clay. EA 4128
Utah, Salt Lake—Arnold Machinery Co., 433 W. Second South St. 22-5631
Wash., Seattle—A. H. Cox & Co., 1757 First Ave. So. MA 1121

GARDNER-DENVER CO. see **KELLER TOOL DIV.**

GATES RUBBER CO., 999 So. Broadway, Denver 17, Colo. SH 4-1911
Belting (fabric, canvas, endless, wire, other), Hose, Ropes, Sheaves.
Branches
Calif., Los Angeles—2850 E. 46th St. LU 8-9221
Calif., San Francisco—170 Ninth St. UN 1-5550
Ore., Portland—2551 N.W. 30th Ave. CA 9641
Utah, Salt Lake—748 Genesee Ave.
Wash., Seattle—3221 Western Ave. GA 3333

GAYLORD CONTAINER CORP., 111 No. Fourth St., St. Louis 2, Mo.
Shipping boxes (corrugated and fibre), Tote boxes (fibre).
Branches
Calif., Los Angeles—1248 Hope St. RI 9-6388
Calif., Oakland—9409 San Leandro. TR 2-7741
Calif., San Francisco—420 Market St. YU 6-1268
Ore., Portland—437 Terminal Sales Bldg. BE 0757
Wash., Seattle—330 Second Ave W. AL 4030

GENERAL NAILING MACHINE CORP., 1324 Smyrna Ave., Sanger, Calif.
Box making machine (wooden), Box lidding machine, Conveyors (automatic, belt, chain or link, gravity roller, skate), Elevators (belt), Scales (packaging, portable).
Representatives
Calif., Lodi—M. C. Locke, 111 Cross St. 8-0114
Calif., Riverside — Shippers Supply Service, 3355 Arlington Dr. OV 3-5175
Calif., Visalia—L. E. Peck Co., P. O. Box 1285. RE 2-2756
Wash., Yakima—Paxton Sales Corp., 102 No. Seventh Ave. 3-7384

GENESEE DISTRIBUTORS, 931 Genesee St., Buffalo, N. Y.
Trucks (drum).
Representative
Calif., Los Angeles—Davis Material Handling Co., 5649 Alhambra Ave. CA 2-7197

GERLINGER CARRIER CO., Lyle and Birch Sts., Dallas, Ore. MA 3-2391
Trucks (diesel fork, gasoline fork, gasoline lift, hydraulic lift, straddle).
Representatives
Ariz., Phoenix—E. D. Flournoy Co., 420 S. Third St. AL 2-0826
Calif., Oakland—Burnaby & Williams, 600 16th St. TE 2-8498
Colo., Denver—Murray Sales Co., 16 Wazee Market. KE 4-5296
N. Mex., Albuquerque—E. D. Flournoy Co., 217 Sixth St. S.W. 3-1055
Ore., Portland—Air-Mac, Inc., 1435 S.E. Union. FI 6524
Utah, Ogden—The Horsley Co., 2416 Grant Ave. 2-1847
Wash., Seattle—Air-Mac, Inc., 3838 Fourth Ave. S. MU 3388

A. J. GERRARD & CO., 1954 Hawthorne Ave., Melrose Park, Ill.
Strapping, Tape (packaging, pressure-sensitive), Doors (grain).
Branches
Calif., Los Angeles—1317 Industrial Ave. BR 2-7539
Calif., Oakland—715 Latham Square Bldg., GL 2-4742
Ore., Portland—6340 S. W. Macadam Ave. CH 4040
Representative
Ariz., Phoenix—Kistler Industrial Sales, 902 S. Central. AL 2-7217

GERRARD STEEL STRAPPING DIV., U. S. STEEL CORP., 2915 W. 47th St., Chicago 32, Ill.
Strapping.
Branches
Calif., Los Angeles—2456 Enterprise St.
Calif., San Francisco—61 Bluxome St.
Ore., Portland—1516 Thurman St. N.W.
Wash., Seattle—1056 Sixth Ave. So.

GLOBE HOIST CO., E. Mermaid Lane at Queen St., Philadelphia 18, Pa.
Dock boards, Elevators, Hoists (electric, hydraulic, portable), Jacks (hydraulic), Loaders, Platforms, Ramps.
Branch
Calif., Long Beach—1461 Canal Ave. 70-5431
Representatives
Ariz., Phoenix—E. D. Flournoy Co., 420 So. Third St.
Calif., Los Angeles—A. R. Sedgebeer, 3140 So. Grand Ave.
Calif., Los Angeles—Stanley E. Morris Co., 5584 Alhambra Ave.
Calif., Los Angeles—Oliver & Williams, 1286 E. Sixth St.
Calif., San Francisco—Home Elevator Co., 1450 15th St.
Calif., San Francisco—Samson Sales Co., 420 Market St.
Calif., San Francisco—San Francisco Elevator Co., 860 Folsom St.
Ore., Portland—F. E. Bennet Co., 426 N.W. Sixth St.
Utah, Salt Lake—Robert Taylor & Sons, 1077 So. Main St.
Utah, Salt Lake—Kimball Elevator Co., 139 Motor Ave.
Wash., Seattle—Pratto Sales Co., 928 12th Ave.

GOODALL RUBBER CO., Whitehead Road, Trenton 4, N. J.
Belting (conveyor, fabric, canvas, elevator, endless), Belt fasteners, Belt lacings, Conveyors (belt), Elevators (belt), Hose.

See advertisement on page 75

Branches
Calif., Los Angeles—2939 E. 11th. AN 3-6723
Calif., San Francisco—398 5th St. SU 1-7944
Colo., Denver—1033 Santa Fe Drive. KE 4-5800
Ore., Portland—1111 N.W. 16th Ave. BR 1259
Utah, Salt Lake—631 So. Second West. EL 5-7437
Wash., Seattle—2751 Fourth Ave. So. MA 8527
Wash., Spokane—814 Paulsen Bldg. MA 8131

B. F. GOODRICH CO., 500 So. Main St., Akron, Ohio
Belting (conveyor, elevator, endless), Conveyors, (belt), Elevators (belt), Tires (industrial truck and trailer).
Branches
Calif., Los Angeles—2944 E. 44th St. LU 1-6151
Calif., San Francisco—1950 Army St. AT 2-9620
Colo., Denver—2500 W. Eighth Ave. TA 1267
Wash., Seattle—1 Hanford St. MU 4300
Representatives
Ariz., Phoenix—Thunderbird Sales Corp., 410 So. First St. AL 4-5876
Calif., Los Angeles—Howard Supply Co., 5125 So. Santa Fe. KI 1281
Calif., Sacramento—Sacramento Rubber Co., 721 J St. GI 2-3847
Calif., San Francisco—Hercules Equipment & Rubber, 435 Brannan St. YU 6-2770
Calif., Stockton—Delta Rubber & Equipment Co., 530 No. Union St. 7-7813
Colo., Denver—A. J. Philpott Co,. 1816 California. AL 5-0550
Ore., Portland—General Rubber & Supply, 101 S.W. First Ave. AT 6565
Utah, Salt Lake—Salt Lake Hardware Co., 105 No. Third West St. 3-5771
Wash., Seattle—Nebar Supply Co., 3000 Western. MA 6292

GOULD-NATIONAL BATTERIES, INC., First National Bank Bldg., St. Paul, Minn.
Batteries.
Branches
Calif., Los Angeles—2678 Lacy St. CA 5-8151
Calif., San Francisco—244 Fremont St. YU 6-6933
Colo., Denver—2315 15th St. GE 2595
Ore., Portland—1973 Lovejoy St. BR 7461

J. W. GREER CO., Wilmington, Mass.
Loaders (pallet).
Representatives
Calif., Los Angeles—M. E. Canfield Co., 419 E. Third St. MA 6-6606
Calif., Oakland—Glen L. Codman Co., Inc., 10521 Pearmain St. SW 8-9100
Colo., Denver—Murray Sales Co., 16 Wazee Market. KE 4-5297
Ore., Portland—Charles H. Day Co., 225 S.W. First Ave. CA 9159
Utah, Salt Lake—Foulger Equipment Co., 1361 So. Second St. West. 7-5459
Wash., Seattle—Preston Faller, 1921 Minor Ave. MA 4256

GRIFFITH EQUIPMENT CO., 4503 Alger, Los Angeles 39, Calif.
Conveyors (apron, automatic skate, special and other), Elevators (barrel, package, etc.)

GRIPHOIST, INC., 700 Polk St., San Francisco, Calif.
Tirfor Griphoist (patented combination winch, hoist and cumalong.)
Representatives
Calif., Alhambra — Abernathy & Co., 312 Orange Grove Ave. AT 4-6415
Colo., Denver—Johnson-Tudor Co., 6198 Colorado Blvd. PE 3-4747
Wash., Bellevue—H. E. Simi, P. O. Box 181, GI 4309

HAMILTON TOOL CO., Ninth and Hanover, Hamilton, Ohio
Stackers (portable electric, portable hand), Tables (conveying, elevating, portable, other), Trucks (die handling, elevating or lifting, hand lift, hand-electric lift, hand-mechanical lift, sheet handling, skid handling).
Representatives
Calif., Los Angeles—Tornquist Machinery, 3838 Santa Fe. LO 8-1601
Calif., San Francisco—B-H-S Machinery, 717 Airport Blvd. PL 5-4466
Colo., Denver—Overgard Machine Tool, 2045 W. Eighth Ave.
Utah, Salt Lake—Mason Machine Tool, 415 So. Second. 4-0189
Wash., Seattle—Tallman Machinery, 2057 15th Ave. AL 5755

HANSON CLUTCH & MACHINERY CO., Wall St., Tiffin 15, Ohio
Cranes (yard, truck, tractor).
Representatives
Ariz., Phoenix—Arizona Cedar Rapids Co., 1726 W. Jackson St. 3-8205
Calif., Los Angeles—Larson Equipment Co., 2421 E. 57th St. KI 5201
Utah, Salt Lake—Taylor Machinery Co., 2800 Beck St. 9-2509
Wash., Seattle—Reliance Equipment & Supply Co., 6150 Fourth Ave. So. LA 2500

HAPMAN CONVEYORS, INC., DIV. OF HAPMAN-DUTTON CO., 630 Gibson St., Kalamazoo, Mich.

Conveyors (apron, bucket, chain or link, continuous flow, drag, flight, foundry, slat, vertical, special and other), Elevators (bucket, continuous flow).

Representatives

Calif., Los Angeles—Davis Material Handling Co., 5649 Alhambra Ave. CA 2-7197
Calif., San Francisco—F. Somers Peterson Co., 157 13th St. MA 1-2255
Colo., Denver — Plant Equipment Co., 1868 Wazee St. AL 5-5413
Wash., Seattle—H. D. Fowler Co., Ninth Ave. So. and Lane St. MA 6107

HARNISCHFEGER CORP., 4400 W. National Ave., Milwaukee 46, Wisc.

Cranes (charging and drawing, gantry, hand power, jib, pillar, swing, bracket, double beam overhead, electric and electric traveling overhead, foundry overhead, hand power traveling overhead, "I" beam overhead, monorail overhead, yard, truck tractor), Hoists (bucket, chain, electric, hand, monorail, portable, traveling), Scales (crane).

Branches

Calif., Los Angeles—2400 E. Imperial Hwy.
Calif., San Francisco—100 Bush St.
Colo., Denver—1108 15th St.
Wash., Seattle— 2909 First Ave. So.

Yard Handling and Excavation Equipment Representatives

Calif., El Centro—Purdy and Holmquist Co., 1275 Main St.
Calif., Eureka—Riley Logging Supply Co., 1034 Broadway
Calif., Escondido—Southern Equipment & Supply Co., 801 W. Grand Ave.
Calif., Fresno—Allied Equipment, 1824 Santa Clara St.
Calif., Los Angeles—Shaw Sales & Service Co., 5100 Telegraph Rd.
Calif., Marysville—Valley Truck & Tractor Co., 100 B St.
Calif., Oakland—Cook Brothers Equipment Co., 416 E. Eighth St.
Calif., Sacramento—Sacramento Valley Tractor Co., 1901 Broadway
Calif., Salinas—Farmers Mercantile Co., 721 Abbott St.
Calif., San Diego—Southern Equipment & Supply Co., 2025 E. Harbor Dr.
Calif., Santa Maria—Hanson Equipment Co., Main St. at Blosser Rd.
Colo., Denver—Liberty Trucks & Parts Co., 690 Lincoln St.
Idaho, Boise—Starline Equipment Co., P. O. Box 2571
Mont., Great Falls—Seitz Machinery Co.
Mont., Kalispel—Treasure State Equipment Co., Fifth and Railroad N.W.
Mont., Missoula—Treasure State Equipment Co., P. O. Box 1497
Nev., Reno — Pioneer Equipment Co. of Nevada, 314 No. Park St.
N. Mex., Las Cruces—Oliver Equipment Co., Route 1, Box 180A
Ore., Eugene—Loggers & Contractors Machinery Co., 540 Fillmore St.
Ore., Portland—Loggers & Contractors Machinery Co., 240 S.E. Clay St.
Utah, Salt Lake—Western Machinery Co., 2300 So. Main St.
Wash., Seattle—Bow Lake Equipment Co., 800 Michigan St.
Wash., Seattle—Glenn Carrington & Co., 91 Columbia St.
Wash., Spokane—Construction Equipment Co., E. 3823 Trent Ave.

Hoist Representatives

Ariz., Phoenix—Arizona Equipment Sales, Inc., 2750 Grand Ave.
Calif., Bakersfield—Gordon's Industrial, 131 First St.
Calif., Bakersfield—Hopper Machine Works
Calif., Hawthorne—Sonnet Supply Co., 576 No. Prairie Ave.
Calif., Los Angeles—ABSCO Welding Supplies, 2202 So. Garfield Ave.
Calif., Los Angeles—Alden Equipment Co., 1741 W. Slauson Ave.
Calif., Los Angeles—Amercon Corp., 2306 W. Slauson Ave.
Calif., Los Angeles—American Monorail Co., 4645 Anaheim-Telegraph Rd.
Calif., Los Angeles—General Conveyor, Inc., 4700 District Blvd.
Calif., Los Angeles—J. W. Lafferty Co., 5422 E. Washington Blvd.
Calif., Los Angeles—Southern Steel & Supply Co., 612 E. 12th St.
Calif., Norwalk—Whiting Corp., 14420 So. Bloomfield Ave.
Calif., San Diego—Southern Equipment & Supply Co., 2025 E. Harbor Dr.
Colo., Denver—General Welding Supply Co., 1416 Blake St.
Colo., Denver—Hack Engineering Co., 124 Wazee Market
Colo., Denver—Lloyd's Railway Supplies, Central Bank Bldg.
Colo., Denver—Bill Mesch Machine Supply Co., 3254 Larimer St.
Idaho, Pocatello—Western Machinery Co., 1132 No. Seventh Ave.
Ore., Eugene—American Steel & Supply Co., 44-51 E. Seventh Ave.
Ore., Milton-Frewater—Key Equipment Co.
Ore., Portland — Allied Northwest Machine Tool Corp., 1222 S.E. Seventh Ave.
Ore., Portland—Industrial Specialties Co., 940 S.E. Seventh Ave.
Ore., Portland—Portland Machinery Co., 208 S.E. First Ave.
Ore., Roseburg—Industrial Electric Service Co., 118 So. Stephens.
Utah, Salt Lake—Cleveland Tramrail Utah Co., Atlas Bldg.
Utah, Salt Lake—Utility Engineers, Inc., 630 Dooly Bldg.
Utah, Salt Lake—Western Machinery Co., 2300 So. Main St.
Wash., Everett—Industrial Electric Co., 2709 Hewitt
Wash., Seattle—Air-Mac, Inc., 3838 Fourth Ave. So.
Wash., Seattle—Bernth & Co., 3493 Klickitat
Wash., Seattle—Cascade Machinery Co., 4600 E. Marginal Way.
Wash., Seattle—Cleveland Tramrail, 5764 28th N.E.
Wash., Seattle—F. T. Crowe & Co., 325 Second W.
Wash., Seattle—Fryer-Knowles, 1718 Broadway
Wash., Seattle—Material Handling Equipment Co., 2963 First Ave. So.
Wash., Seattle—Richard Wilcox Mfg. Co., 2922 Blakely Ave.
Wash., Spokane—Washington Machinery & Supply Co., W. 9 Cataldo St.
Wash., Spokane—Mansur Materials Co., No. 809 Helena St.

HARRINGTON CO., Gravers Road at the Turnpike, Plymouth Meeting, Pa.

Cranes (gantry, jib, pillar, swing, bracket, hand power overhead, I beam overhead, locomotive overhead), Hoists (chain, electric, hand, monorail), Trolleys, Winches, Windlasses.

Representatives

Calif., Los Angeles—E. R. Palmtag Co., 164 So. Central Ave.
Calif., San Francisco—E. R. Palmtag Co., 975 Indiana St. AT 2-2600

HEWITT-ROBINS, INC., 666 Glenbrook Road, Stamford, Conn.

Baskets (wire), Belting (conveyor, elevator, endless, wire, other), Conveyors (belt, bucket, vertical, vibrating, special and other), Elevators (belt, bucket), Hoists (skip), Pulleys (conveyor), Screens, Slings (belt), Stackers.

See advertisement on page 34

Branches

Ariz., Phoenix—604 Title & Trust Bldg. AL 4-3121
Calif., Los Angeles—2604 So. Malt Ave. RA 3-4771
Colo., Denver—660 Bannock St. AC 2-8484
Idaho, Boise—2400 Warm Springs Ave.
Ore., Portland—218 Henry Bldg. AT 4921
Utah, Salt Lake—545 W. Eighth South St. 9-8731
Wash., Seattle—208 Columbia St. MA 8640

"HH" MANUFACTURERS, 1140 W. Broadway, Long Beach 2, Calif.

Yard Cranes, Hoists (gasoline, hydraulic, portable), Gasoline warehouse tractors, Trailers (factory and warehouse, tractor), Trucks (bag, barrel, drum, gasoline fork, hand, gasoline lift, hydraulic lift, power-driven lift), Wheels (tractor, trailer).

Representatives

Ore., Portland—Air-Mac, Inc., 1435 S.E. Union Ave. FI 6524
Wash., Seattle—Air-Mac, Inc., 3838 Fourth Ave. So. MU 3388

HOLLAENDER MFG. CO., 3841 Spring Grove Ave., Cincinnati 23, Ohio

Rocks (fittings for building).

Representatives

Calif., Los Angeles — McKinley Equipment Corp., 1003 Santa Fe Ave. MA 6-5651
Calif., San Francisco—Pacific Metals Co., Ltd., 3100 19th St. EN 1-0806
Colo., Denver—Metal Goods Corp., 2425 Walnut St. AC 5891
Ore., Portland—Pacific Metals Co., 303 N.W. Park Ave. BR 0693
Utah, Salt Lake—Pacific Metals Co., 261 W. Fifth South St.
Wash., Seattle—Pacific Metals Co., 4150 First Ave. So.

HOLZER-CABOT DIV., NATIONAL PNEUMATIC CO., 125 Amory St., Boston, Mass.

Door controls (pneumatic, electro-hydraulic, photo-electric and treadle control).

Branch

Calif., Los Angeles—1260 So. Boyle Ave. AN 3-4663

Representatives

Calif., San Francisco—Cookson Co., 1525 Cortland Ave. VA 6-4423
Colo., Denver—Mavista Corp., P. O. Box 8319 Union Pacific Station

HOLZ TIRE & RUBBER CO., 1129 So. Sacramento St., Lodi, Calif.

Belting (conveyor, other), Conveyors (flight), Rollers, Tires.

HOUDAILLE-HERSHEY OF INDIANA, 415 Indianapolis Ave., Lebanon, Ind.

Conveyors (flight).

Branch

Calif., Los Angeles—1010 So. Robertson Blvd., BR 2-2335

Representatives

Calif., Los Angeles—Burke & Co., 2902 Hyde Park Blvd. PL 3-1606
Calif., Redwood City — Western Power & Equipment Corp., 909 Broadway. EM 8-3311
Colo., Denver—G. M. Wallace & Co., Denham Bldg.
Ore., Portland—Oil Filter Service Co., 615 S.E. Market St. EA 5129
Wash., Seattle—Oil Filter Service Co., 1019 Westlake Ave. MU 3950

FRANK G. HOUGH CO., 889 Sunnyside Ave., Libertyville, Ill.

Loaders (portable, self-propelled), Tractors.

Branches

Calif., Inglewood—Merle M. Fate, 10509 Third Ave.
Calif., San Mateo—Donald O. Ross, 1485 Lake View Dr.
Colo., Aurora—David B. Hunsaker, 1000 Kenton St.

Representatives

Ariz., Phoenix—State Tractor & Equipment Co., 407 So. 17th Ave.
Ariz., Tucson—F. Ronstadt Hardware Co., P. O. Box 5138
Calif., Bakersfield — Brown - Bevis Industrial Equipment Co., P. O. Box 811
Calif., Eureka—Howard - Cooper Corp., 2616 Broadway
Calif., Five Points — Allied Equipment Co., P. O. Box 547.
Calif., Fresno — Allied Equipment Co., 1824 Santa Clara St.
Calif., Los Angeles—Brown-Bevis Industrial Equipment Co., 6550 E. Washington
Calif., Madera—Allied Equipment Co.
Calif., Oakland—Bay Cities Equipment Co., 2792 Cypress Ave.
Calif., Redding—Sullivan & Crowe Equipment Co., 2637 Angelo Ave.
Calif., Reedley—Allied Equipment Co.
Calif., Riverside—Braman-Dickerson Co., P. O. Box 471
Calif., Sacramento — Sacramento Valley Tractor Co., 19th & Broadway
Calif., San Diego—Southern Equipment & Supply Co., 2025 E. Harbor Dr.
Calif., San Jose—Valley Equipment Co., 1178 W. San Carlos St.
Calif., Santa Maria — Hanson Equipment Co., P. O. Box 870
Colo., Denver—H. W. Moore Equipment Co., P. O. Box 2491
Colo., Grand Junction—H. W. Moore Equipment Co., 2335 Grand Ave.
Idaho, Boise—Intermountain Equipment Co., P. O. Box 1128
Idaho, Pocatello — Intermountain Equipment Co., 210 No. Fourth St.
Mont., Billings—Industrial Equipment Co., 415 No. 27th St.
Mont., Great Falls—Power Equipment Co., 422 Second St.
Montana, Missoula—Treasure State Equipment Co., 400 Knowles
Nev., Las Vegas—Clark County Wholesale Mercantile Co., 512 So. Main St.
Nev., Reno—Nevada Equipment Service, Inc., 1525 So. Main St.

N. Mex., Albuquerque—J. D. Coggins Co., 1717 Second St.
Ore., Albany—Howard-Cooper Corp., P.O. Box 423
Ore., Central Point — Howard-Cooper Corp., P. O. Box 667
Ore., Coquille—Howard-Cooper Corp., P. O. Box 1
Ore., Eugene—Howard-Cooper Corp., 107 Van Buren St.
Ore., Hermiston—Pendleton Grain Growers, Inc.
Ore., Pendleton — Pendleton Grain Growers, Inc., 106 S.E. First St.
Ore., Portland — Howard-Cooper Corp., 5821 N.E. Glisan St.
Ore., Roseburg—Howard-Cooper Corp., 225 E. Second Ave.
Wash., Seattle—Glenn Carrington & Co., 91 Columbia St.
Wash., Seattle—Howard-Cooper Corp., 5045 Fourth Ave.
Wash., Spokane — Intermountain Equipment Co., 611 E. Sprague St.
Wyo., Casper—Keremi Tractor & Equipment Co., 414 So. Elm
Wyo., Cheyenne—Keremi Tractor & Equipment Co., P. O. Box 908

E. F. HOUGHTON & CO., 303 W. Lehigh Ave., Philadelphia, Pa.
Belting (leather), Belt fasteners & belt lacings.
Branches
Calif., Los Angeles—109 No. Ave. 18. CA 1-6174
Calif., San Francisco—1500 Davidson Ave. VA 4-3207
Ore., Portland—208 S.W. Stark St., AT 9211
Wash., Seattle—4100 E. Marginal Way. MA 7961

C. E. HOWARD CORP., 9001 Rayo Ave., South Gate, Calif.
Stainless steel truck and semi trailers for hauling liquids.
Branch
Calif., Oakland—449 Rich St. HY 4-5655
Representative
Calif., Los Angeles—Fruehauf Trailer Co., 5137 So. Boyle Ave. LU 7-1181

HOWE SCALE CO., Rutland, Vt.
Scales (automatic, conveyor, counting, monorail, packaging, portable, warehouse, other), Trucks (bag, barrel, drum, box type, dolly, factory and warehouse, hand, packing house, paper roll, sheet handling, skid handling).
Branches
Calif., Los Angeles—2616 Malt Ave. RA 3-4876
Calif., San Francisco—780 Tennessee St. SU 1-8807
Colo., Denver—2624 Walnut St. AL 5-4364
Wash., Seattle—3222 Western Ave. GA 8660

HUGHES-KEENAN CORP., South St., Delaware, Ohio
Cranes (yard, truck, tractor).
Representatives
Calif., Los Angeles—Casey-Metcalf Machinery Co., 5515 E. Slauson Ave.
Calif., Los Angeles—James P. Kinney Co., 5141 Telegraph Rd.
Calif., San Francisco—Caesar Baldassari, 547 Howard St.
Mont., Billings—Industrial Equipment Co.
Utah, Salt Lake—Foulger Equipment Co., 1361 So. Second West St.

HUMPHREY ELEVATOR CO., P. O. Box 364, Faribault, Minn.
Elevators (belt, manlift).
Representatives
Calif., Oakland—E. C. Buehrer Associates, 351 Fifth St. TE 6-2082
Calif., San Francisco—Link-Belt Co., 400 Paul Ave. JU 7-6400
Ore., Portland—J. J. Ross Mill Furnishing Co., 708 N.E. Second St. EA 2197
Wash., Seattle—J. J. Ross Mill Furnishing Co., 2208 First Ave. So. EL 3305
Wash., Seattle—James Brinkley Co., 417 Ninth Ave. So. MA 0062

Because manufacturers listed in this Directory all have Western offices, using these pages can save you time and money.

HURT CONVEYOR CO., 1415 Mateo St., Los Angeles 21, Calif. TR 6408
Belting (chain link, composition, conveyor, fabric, canvas, elevator), Conveyors (apron, automatic, bag and bale, belt, bucket, chain or link, drag, flight, gravity roller, live roller, overhead, portable, slat), Elevators (barrel, package, belt, bucket), Conveyor pulleys, Conveyor rollers, Conveying tables and Wheels.

See advertisement on page 160

HYDROWAY SCALES, INC., 20624 W. Eight Mile, Detroit, Mich.
Scales (portable, crane).
Representatives
Calif., Glendale—Carl J. Kennedy Co., 918 No. Kenilworth. CH 5-3145
Calif., San Francisco—Edwin L. Fry, 420 Market St. DO 2-8515
Wash., Seattle—Materials Handling Equipment Corp., 2963 First St. So. SE 0997

HYSTER CO., 2902-90 N. E. Clackamas St., Portland 8, Ore.
Cranes (yard, truck, tractor), Grabs, Trucks (bag, barrel, drum, box type, die handling, elevating or lifting, factory and warehouse, diesel fork, gasoline fork, gasoline lift, packing house, pallet, paper roll, sheet handling, skid handling and straddle), Winches and Windlasses.

See advertisement on page 17

Branches
Calif., Eureka—1303 Albee St. HI 2-4610
Calif., Los Angeles—2425 S. Garfield Ave. RA 3-6255
Calif., San Diego—1220 Front St. FR 9-4343
Calif., San Francisco—4445 Third St. MI 8-0680
Ore., Portland—2105 S.E. Seventh Ave. FI 6471
Wash., Seattle—753 Ninth Ave. No. EL 2401
Wash., Spokane—1107 Freva St. MA 3561
Representatives
Ariz., Phoenix—Equipment Sales Co., 720 So. 19th Ave. AL 4-4786
Colo., Denver—King & East Machinery Co., 2390 So. Delaware St., SH 4-2903
Nev., Las Vegas—Cashman G.M.C. Truck Co., 118 No. Main St. Phone 7400
Utah, Salt Lake—Arnold Machinery, 433 W. Second So. 4-6401
Wash., Seattle (Alaska)—Northern Commercial Co., 427 Colman Bldg. MU 2300
Hawaii, Honolulu—Electric Steel Foundry, 630 So. Queen St.

INDUSTRIAL MARKING EQUIPMENT CO., 454 Baltic St., Brooklyn 17, N.Y.
Bags (multi-wall printers), Shipping boxes (printers and numberers), Conveyors (markers), Marking equipment (automatic).
Representatives
Calif., Oakland—James Q. Leavitt Co., 410 25th St., TW 3-9964
Calif., San Francisco—King Sales, 441 Folsom St., EX 2-7664
Colo., Denver—Edwin F. Deline, 224 W. Alameda Ave.
Ore., Salem—James Q. Leavitt Co., Box 67. Phone 2-0970
Utah, Ogden—James Q. Leavitt Co., Box 364. Phone 3-8551
Wash., Seattle—James Q. Leavitt Co., 2702 First Ave. So. MA 3654

INDUSTRIAL SKID & PALLET CO., 3401 E. 15th St., Los Angeles 23, Calif. AN 1-0259
Boxes (tote), Pallets, Platforms (skid), Racks (pallet, storage, other), Trucks (dolly, factory and warehouse, skid handling).
Representatives
Calif., Los Angeles—W. T. Billard, Inc., 734 E. Third St. MI 2659
Calif., Los Angeles—M. E. Canfield Co., 419 E. Third St. MA 6-6606
Calif., Los Angeles—Colson Equipment Co., 1317 Willow St. TR 5744
Calif., San Francisco—Ira G. Perin Co., 545 Howard St. GA 1-1827
Calif., San Francisco—Hamerslag Equipment Co., 45 Elmira St. JU 7-1357
Wash., Seattle—Secord Sales Co., 95 Connecticut St.

INLAND WIRE PRODUCTS CO., 3947 So. Lowe Ave., Chicago 9, Ill.
Strapping (flat, round), Wire tying machines, Stitching machines, Stitching wire.
Branches
Calif., Los Angeles—4293 Bandini Blvd. AN 0149
Calif., San Leandro—2420 Merced. LO 2-4645
Representatives
Colo., Denver—Katzke Brothers Paper Co., 725 W. Bayaud. PE 3-4681
Ore., Portland—Portland Wire & Steel Warehouse, 4706 S.E. 18th Ave. EM 2194

INSLEY MFG. CORP., 801 No. Olney Ave., Indianapolis, Ind.
Cranes (yard, truck, tractor).
Branch
Calif., Los Angeles—3278 Wilshire Blvd., DU 4-7386
Representatives
Ariz., Phoenix—Shriver Machinery Co., Box 1270. AL 2-2356
Calif., Fresno—Geo. M. Philpott Co., 2376 Railroad Ave. 6-9843
Calif., Redding—Sullivan & Crowe Equipment Co., Angelo and So. Market. 2280
Calif., San Francisco—Western Traction Co., 2230 Third St. MA 1-4913
Calif., Stockton—Graco, Box 1931. Phone 5-5953
Calif., Woodland—Graco, 460 No. East St. 2-2821
Colo., Grand Junction—S & M Supply Co., 735 Fourth Ave. 2966
Mont., Helena—Caird Engineering Works, Box 837. Phone 169
Nev., Las Vegas—Inland Service & Supply Corp., 818 So. Main St.
N. Mex., Albuquerque—M & F Equipment Co., 824 No. Arno. Phone 3-3793
Ore., Portland—Wood Tractor Co., 1033 S.E. Main St. VE 3135
Ore., Portland—Wood Tractor Co., 1033 S.E. Main St. VE 3135
Utah, Salt Lake—Rocky Mountain Machinery Co., 1485 So. Second West St. 84-4378
Wash., Seattle — Washington Machinery Co., 7829 E. Marginal Way. RA 1123

IRONBOUND BOX & LUMBER CO., 142 Hoffman Place, Hillside, N. J.
Jacks (lift), Pallets, Trucks (box type, dolly, factory and warehouse, hydraulic lift, paper roll).
Representatives
Calif., Los Angeles—McKinley Equipment Co., 1025 So. Santa Fe Ave.
Calif., San Francisco—P. F. O'Donnell Co., 527 Brannan St.
Utah, Salt Lake—Equipment Supply Co., 16 Post Office Pl.

IRON WORKS, INC., 116 King St., Brooklyn 31, N. Y.
Grabs, Trucks (attachments and devices).
Representatives
(Through industrial truck dealers and manufacturers)

ISLAND EQUIPMENT CORP., 27-01 Bridge Plaza No., Long Island City 1, N. Y.
Conveyors (apron, bottle and jar, container, belt, chain or link, live roller, portable), Tables (conveying, unscrambling, accumulating)
Representatives
Calif., Los Angeles—Green-Penny Co., 421 E. Washington Blvd.
Utah, Salt Lake—Equipment Supply Co., 16 Post Office Place

JACKSON MFG. CO., P. O. Box 9, Harrisburg, Pa.
Carts (hand, push), Wheelbarrows (industrial), Wheels (general industrial, rubber tired).
Representatives
Calif., Los Angeles—Lippincott Co., 1052 W. Sixth St.
Calif., San Francisco—Lippincott Co., 995 Market St.
Utah, Salt Lake—Lippincott Co., 109 W. Second St. South
Wash., Seattle—Lippincott Co., 911 Western Ave.

JAKES FOUNDRY CO., 2800 Charlotte Ave., Nashville 9, Tenn.
Carts (hand, push, other), Casters, Tires, Trailers (factory and warehouse), Trucks, (bag, barrel, drum,

box type, die handling, dolly, factory and warehouse, hand, packing house, paper roll, sheet handling, other), Wheels (general industrial, hand truck, rubber tired, tractor, trailer).

Representatives

Calif., Los Angeles—Colson Equipment & Supply Co., 1317 Willow St. TR 5743
Calif., Los Angeles—Utilities Supply Co., 1736 E. 15th St. RI 9-3178
Calif., San Francisco—Elder & Co., 390 Seventh St. UN 1-5480
Calif., San Francisco—W. R. Voorhees & Co., 417 Market St. SU 1-6574
Ore., Portland—R. H. Brown Co., 604 N.W. Sixth Ave. AT 5235
Wash., Seattle—R. H. Brown Co., 502 First Ave. So. SE 0707

JEFFREY MFG. CO., 951 No. Fourth St., Columbus 16, Ohio

Chains, Conveyors (apron, automatic, bag and bale, belt, bucket, chain or link, continuous flow, drag, flight, foundry, live roller, screw, slat, vibrating, special and other), Elevators (belt, bucket, continuous flow), Hoists (skip), Pulleys.

Branch

Calif., San Francisco—870 Market St. SU 1-8683

Representatives

Calif., Gardena—Alden Equipment Co., 1449 W. Rosecrans Ave. DA 9-6341
Calif., Los Angeles—Edward D. Maltby Co., 1718 So. Flower St. RI 7-9191
Calif., Maywood—Edward D. Maltby Co., 4035 E. 52nd St. LO 5-5304
Calif., Oakland—Bearing Engineering Co., 1019 Harrison St. TW 3-2251
Calif., San Francisco—General Conveyor, Inc., 870 Market St. EX 7-0737
Calif., San Francisco—Bearing Engineering Co., 1547 Mission St. HE 1-1500
Colo., Denver—E. C. Horne Machinery Co., 1726 Champa St. TA 5-7015
Ore., Portland—Northwest Chains & Sprockets, Inc., 123 S.W. Pine St. AT 5002
Utah, Salt Lake—National Equipment Co., 101 W. Second South St. 3-8878
Wash., Seattle—Northwest Chains & Sprockets, Inc., 3628 E. Marginal Way. MA 8629

JIFFY MFG. CO., 360 Florence Ave., Hillside, N. J.

Bags (shipping), Boxes (liners), Packing materials and pads.

Representatives

Calif., Los Angeles—Ray T. Ebert Co., 922 No. Formosa Ave.
Calif., Redwood City—Ray T. Ebert Co., 945 Douglas Ave.
Wash., Seattle—Ray T. Ebert Co., 223 E. Lake Ave.

JOHNSON & FLAHERTY MFG. CO. 5801 District Blvd., Los Angeles

Racks (pallet, storage, other).

JOYCE CRIDLAND CO., 2027 E. First St., Dayton 3, Ohio

Dock boards (hydraulic, adjustable), Jacks (hydraulic, lift, screw, other), Platforms (loading, hydraulic), Lifts (hydraulic, industrial).

Representatives

Ariz., Phoenix—Paramount Mfg. Co., 515 So. First St. AL 4-4951
Calif., Los Angeles—Paramount Mfg. Co., 2336 E. 38th St. KI 2291
Calif., San Francisco—Paramount Mfg. Co., 905 Mills Bldg. GA 1-1416
Ore., Portland—Paramount Mfg. Co., 816 N.W. 12th Ave. BE 8542
Wash., Seattle—Paramount Mfg. Co., 2221 Fourth Ave. EL 3363

JOY MFG. CO., Henry W. Oliver Bldg., Pittsburgh 22, Pa.

Conveyors (belt, flight, foundry, portable), Hoists (air, electric, gasoline, portable).

Branches

Calif., Los Angeles—5426 E. Washington Blvd. RA 3-6305
Calif., San Francisco—1155 Harrison St. HE 1-2446
Colo., Denver—1626 Wazee St. KE 4-6334
Utah, Salt Lake—1359 So. Second West St. 7-1559

KALAMAZOO MFG. CO., 1827 Reed St., Kalamazoo 24, Mich.

Tractors (warehouse electric, gasoline warehouse), Trucks (bag, barrel, drum, industrial).

Representatives

Calif., Los Angeles—James E. Simkins, 1748 W. 54th St.
Ore., Portland—Manford Pate, 1118 S.W. Palatine Hill Rd.
Wash., Edmonds—Charles Industrial Sales, Box 338

KAY-BRUNNER STEEL PRODUCTS, INC., 999 Meridian Ave., Alhambra, Calif. AT 2-2194 and CU 3-2141

Axles (truck, trailer), Electric furnace steel castings.

See advertisement on page 55

KELLER TOOL DIV., GARDNER-DENVER CO., 1333 Fulton St., Grand Haven, Mich.

Hoists (air), Trolleys.

Branches

Calif., Los Angeles—1053 W. Seventh St. MI 0843
Calif., San Francisco—811 Folsom St. EX 2-3747
Wash., Seattle—615 Eighth Ave. SE 1115

Representative

Colo., Denver—E. C. Wild Co., 308 E. Louisiana. SP 2852

KELLEY CO., 316 E. Silver Spring Dr., Milwaukee 17, Wisc.

Deck boards.

Representatives

Calif., Los Angeles—James P. Kinney Co., 5141 Telegraph Rd. AN 9-7411
Calif., San Francisco—Industrial Truck Sales, 563 Second St. YU 6-4261
Colo., Denver—Allis-Lee Equipment Co., 1133 Speer Blvd. MA 3-5311
Ore., Portland—Charles H. Day Co., 225 S.W. First Ave. CA 9189
Utah, Salt Lake—Material Handling Engineers, Atlas Bldg. 5-8751
Wash., Seattle—H. L. McElhaney Co., 425 Alaskan Way So. SE 5232

KELSEY-HAYES WHEEL CO., see **FRENCH & HECHT DIVISION**

KIMBERLY-CLARK CORP., Neenah, Wisc.

Packing material (cellulose cushioning).

Representatives

(Distribution through branches of following paper companies:)
Blake, Moffit & Towne
Carpenter Paper Co.
Dixon & Co.
Graham Paper Co.
Noland Paper Co.
Zellerbach Paper Co.

KOEHRING CO., 3026 W. Concordia Ave., Milwaukee 16, Wisc.

Cranes, Trucks.

Branch

Calif., Stockton—2200 Country Club Blvd.

Representatives

Ariz., Phoenix—Neil B. McGinnis Equipment Co., 500 So. Central Ave. AL 8-5391
Calif., Bakersfield—San Joaquin Tractor Co., Hwy 99 and California Ave. 4-4517
Calif., Los Angeles — Harron, Rickard & McCone, 3850 Santa Fe Ave. LO 5-8361
Calif., San Francisco — Standard Machinery Co., 450 Bayshore Blvd. AT 2-2883
Colo., Denver—McKelvey Equipment Co., 2375 15th St. GE 3338
Idaho, Boise—Engineering Sales & Service, 410 Capitol Blvd. 3-2535
Mont., Billings—Western Construction Equipment Co., 505 No. 24th St. 9-5501
N. Mex., Albuquerque—Harry Cornelius Co., 1510 No. Second St. 3-1776
Ore., Portland—Columbia Equipment Co., 1240 S.E. 12th Ave. EA 7148
Utah, Salt Lake—Kimball Equipment Co., 222 W. 17th So. 84-6109
Wash., Seattle—Pacific Hoist & Derrick, 3200 Fourth Ave. So. EL 1860
Wash., Spokane—American Machine Co., 1026 W. Broadway. FA 2591

KWIK-MIX CO., 235 W. Grand Ave., Port Washington, Wisc.

Trucks (bag, barrel, drum, box type, elevating or lifting, factory and warehouse, gasoline fork, motorized hand, industrial, gasoline lift, hydraulic lift, power-driven lift, motor, packing house, pallet, skid handling).

Representatives

Ariz., Phoenix—Neil B. McGinnis Co., 500 So. Central Ave.
Calif., Bakersfield—San Joaquin Tractor Co., P. O. Box 216, Station B
Calif., Los Angeles—Harron, Rickard & McCone Co., 3850 Santa Fe Ave.
Calif., San Francisco—Standard Machinery Co., 450 Bayshore Blvd.
Colo., Denver—McKelvy Machinery Co., 2375 15th St.
Idaho, Boise — Engineering Sales & Service, Inc., 410 Capitol Blvd.
N. Mex., Albuquerque—Harry Cornelius Co., 1510 No. Second St.
Ore., Portland—Columbia Equipment Co., 1240 S.E. 12th Ave.
Utah, Salt Lake—Kimball Equipment Co., 222 W. 17th South St.
Wash., Seattle—Pacific Hoist & Derrick Co., 3200 Fourth Ave.
Wash., Spokane—American Machine Co., 1026 W. Broadway

LAMSON CORP., Lamson St., Syracuse 1, N. Y.

Conveyors (automatic, bag and bale, belt, continuous flow, drag, flight, gravity roller, live roller, overhead, pallet, skate, slat, trolley, vertical, special and other).

Branches

Calif., Los Angeles—306 E. Washington Blvd. RI 7-0615
Calif., San Francisco—555 Bryant St. SU 1-8852

Representatives

Colo., Denver—Wm. Colin Kirk & Associates, 1197 Stout St. KE 4440
Colo., Denver—Union Supply Co., 5460 Colorado Blvd. AL 5-2091
Wash., Seattle—H. L. Kirkwood, 2202 First Ave. W. SE 6860
Wash., Seattle—Thurlow-Moe, Inc., 2405 11th Ave. S.W. EL 5272 and MU 1323

LANDAHL CONVEYOR CO., DIV. OF AMERICAN MONORAIL CO., Columbus, Ohio

Continuous trolley driven conveyors.

Branch and Representative

(Same as American MonoRail Co. See listing)

See advertisement on page 14

LANSING CO., 603 N. Cedar St., Lansing 3, Mich.

Trailers (factory and warehouse), Trucks (bag, barrel, drum, box type, factory and warehouse, hand), Wheels (hand truck, rubber tired, trailer), Wheelbarrows.

Branch

Calif., San Francisco—338-48 Brannan St. EX 2-2947

LEE RUBBER & TIRE CORP., see **REPUBLIC RUBBER DIV.**

LESCHEN WIRE ROPE DIV., H. K. PORTER CO., 2727 Hamilton Ave., St. Louis 12, Mo.

Slings (wire rope), Wire rope.

Branches

Calif., Los Angeles—6424 E. Fleet St. RA 3-1395
Calif., San Francisco—520 Fourth St. GA 1-8184
Wash., Seattle—2724 First Ave. So. SE 0851

LeTOURNEAU-WESTINGHOUSE CO., 2301 No. Adams St., Peoria, Ill.

Cranes (jib, yard), Loaders (portable, self-propelled), Rollers (compaction), Tractors (diesel), Winches, Wire Rope, Hauling units (rear dump, heavy duty), Scrapers, Logging tools.

Representatives

Ariz., Phoenix—Superior Equipment Co., 2402 So. 19th Ave. AL 3-2116
Calif., Los Angeles—Crook Co., 2900 Santa Fe Ave. KI 7214

Colo., Denver—Liberty Trucks & Parts Co., 690 Lincoln St. MA 3-3241
Idaho, Boise—Western Equipment Co., 4009 Fairview Ave. Phone 3-5401
Mont., Billings—Western Construction Equipment Co., 505 No. 24th St. 9-5501
Nev., Reno—Pioneer Equipment Co., 525 Kietzke Lane. 3-1333
N. Mex., Albuquerque—Construction Equipment & Supply Co., 707 Broadway N.E. 3-3565
Ore., Portland—Loggers & Contractors Machinery Co., 240 S. E. Clay St. EA 4128
Utah, Salt Lake—Rocky Mountain Machinery Co., 1485 So. Second West St. 84-4378
Wash., Spokane—Modern Machinery Co., E. 4412 Trent Ave. KE 9353
Wyo., Casper—Moss Equipment & Supply Co., P. O. Box 1727. Phone 2-4547

G. B. LEWIS CO., 406 Montgomery St., Watertown, Wisc.

Woven wood-and-wire returnable shipping boxes; 4-wheel box trucks; stacking and skid boxes; Fiberglass reinforced polyester tote boxes, trays and 4-wheel panel trucks.

See advertisement on page 70

Representatives
Calif., Fresno—Valley Forklift Rental & Equipment Co., 2424 So. Railroad Ave. 8-2074
Calif., Los Angeles—Irving G. King & Co., 821 Mateo St. TU 3176
Calif., Oakland—E. C. Buehrer Associates, Inc., 351 Fifth St., TE 6-2082
Ore. Portland—Oregon Handling Equipment Co., 2949 N.W. St. Helens Rd. AT 4196
Utah, Salt Lake—Equipment Supply Co., 16 Post Office Pl. 3-9074
Wash., Seattle—A.I.M. Plastics Co., 408 Broad St. 6750

LEWIS-SHEPARD PRODUCTS, INC., 101 Walnut St., Watertown, Mass.

Carts (hand, push, other), Cranes (hand power), Jacks (hydraulic), Racks (pallet, storage, other), Stackers (portable electric, portable hand), Trucks (bag, barrel, drum, box type, die handling, elevating or lifting, factory and warehouse, electric fork, hand, motorized hand, industrial, hand lift, hand-electric lift, hand-mechanical lift, hydraulic lift, power-driven lift, packing house, pallet, paper roll, sheet handling, skid handling, straddle, electric tiering, other), Wheels (general industrial, hand truck, rubber tired, tractor, trailer).

Representatives
Ariz., Tucson—Lyman J. Clarke, 2625 No. First Ave. 4-6233
Calif., Los Angeles—M. E. Canfield Co., 419 E. Third St. MA 6-6606
Calif., San Francisco—Howard Burt & Sons, 1054 Broadway, Burlingame. DI 2-2058
Colo., Denver—Raymond J. Purinton, 1754 Blake St. AL 5-8452
Ore., Portland—Liftruck & Equipment Co., 2201 N.W. Thurman St. AT 4508
Utah, Salt Lake—Modern Equipment Co., 52 W. Second South St. 9-2171
Wash., Seattle—Liftruck & Equipment Co., 2737 Fourth Ave. So. EL 7117

LIFT TRUCKS, INC., 2425 Spring Grove Ave., Cincinnati 14, Ohio

Tractors (electric, warehouse), Trucks (motorized hand, hand lift, hand-electric lift, hydraulic lift, power-driven lift, pallet, skid handling, straddle, tiering).

Representatives
Calif., Los Angeles — McKinley Equipment Corp., 1003 Santa Fe Ave. MA 6-5651
Wash., Seattle—B & L Sales Co., 5245 Pullman Ave. FI 5245

LINK-BELT CO., 307 N. Michigan Ave., Chicago 1, Ill.

Belting (chain link, conveyor, elevator), Storage bins, Chains, Conveyors (apron, automatic, bag and bale, belt, bucket chain or link, continuous flow, drag, flight, foundry, overhead, pallet, screws, slat, trolley, vertical, vibrating), Elevators (belt, bucket, continuous flow), Pulleys, Rollers (conveyors), Tables (conveying, elevating), Trolleys, Wheels, Winches and Windlasses.

See advertisement on pages 6 and 7

Branches
Calif., Los Angeles—361 S. Anderson St. AN 6171
Calif., Oakland—1025 Harrison St. HI 4-4285
Calif., San Francisco—400 Paul Ave. JU 7-6400
Utah, Salt Lake—108 So. Fourth West St. DA 2-2539
Wash., Seattle—3405 Sixth Ave. So. SE 8200
Wash., Spokane—N. 1303 Washington St. BR 2131

LIPPMANN ENGINEERING WORKS, 4603 W. Mitchell St., Milwaukee 14

Bins, Conveyors (apron, bag and bale, belt, bucket, flight, foundry, gravity roller, live roller, overhead, pallet, portable, screw, skate, slat), Elevators (bucket), Loaders (portable, self-propelled), Pulleys (conveyor), Rollers (conveyor).

Representatives
Ariz., Phoenix—Western Machinery Co., 820 No. 17th St.
Calif., San Francisco—Coast Equipment Co., 444 Eighth St.
Colo., Denver—Woodriff Bros., 617 Cooper Bldg.
Idaho, Idaho Falls—Southern Idaho Equipment Co., 2055 W. Yellowstone Hwy.
Ore., Portland—Loggers & Contractors Machinery Co., 240 S.E. Clay St.
Wash., Seattle—Hulse Machinery Co., Inc., 3300 Fourth Ave. So.

LITTLE GIANT PRODUCTS, INC., 1600 No. Adams St., Peoria 3, Ill.

Axles (trucks), Hoists (hand), Winches and Windlasses.

Representatives
(Available at most lift truck dealers in the West)

LONGVIEW FIBRE CO., Longview, Wash.

Corrugated and fibre boxes.

Branches
Calif., Los Angeles—4955 Maywood Ave.
Calif., Oakland—8511 Blaine St.
Calif., San Francisco—1 Montgomery St.
Ore., Portland—U. S. National Bank Bldg.
Wash., Seattle—5901 E. Marginal Way
Wash., Yakima—Holtzinger Bldg.

LOOMIS MACHINE CO., 133 E. Fourth, Clare, Mich.

Ramps.

Representatives
Calif., Los Angeles—Irving G. King & Co., 821 Mateo. TU 3176
Calif., San Francisco — Western Industrial Equipment Co., 420 Market
Colo., Denver—Urban M. Lodge, 2689 So. Jackson St.
Ore., Portland—Air-Mac, Inc., 1435 S.E. Union Ave. FI 6524
Wash., Seattle—Air-Mac, Inc., 3838 Fourth Ave. MU 3388

LOUDEN MACHINERY CO., 607 W. Broadway, Fairfield, Iowa

Conveyors (overhead), Cranes (gantry, jib, pillar, swing, double beam overhead, electric and electric traveling overhead, foundry overhead, hand power overhead, I beam overhead, monorail overhead), Hoists (monorail).

Representatives
Calif., Los Angeles—Alden Equipment Co., 47666 Wagner Station. DA 9-6341
Calif., San Francisco—Acme Equipment Co., 840 Harrison St. EX 2-1560
Colo., Denver—Plant Equipment Co., 1863 Wazee St., AL 5-5413
Ore., Portland—Allied N. W. Machine Tool Corp., 1222 S. E. Seventh Ave. FI 7513
Utah, Salt Lake—Utility Engineers, Inc., 630 Dooly Bldg. 3-4682
Wash., Seattle—Bernth & Co., 3493 Klickitat. MA 6382

LYON METAL PRODUCTS, INC., 40 Monroe St., Aurora, Ill.

Boxes, tote, Carts (stock, service), Racks (storage).

Branches
Ariz., Phoenix—5545 No. Kay Dr. AL 8-8511
Calif., Los Angeles—3650 Union Pacific Ave. AN 9-8161
Calif., San Francisco—P. O. Box 3096. SU 1-5490
Ore., Portland—P. O. Box 3797. CA 8-2713
Wash., Seattle—1755 Utah Ave. MU 0383

MACWHYTE CO., 2979 Fourteenth Ave., Kenosha, Wisc.

Slings (wire rope), Wire rope.

Branches
Calif., Los Angeles—2035 Sacramento St. TR 8383
Calif., San Francisco—141 King St. EX 2-4966
Ore., Portland—1603 N.W. 14th Ave. BR 1661
Wash., Seattle—87 Holgate St. MA 1715

MAGLINE, INC., P. O. Box 402, Pinconning, Mich.

Carts (hand), Conveyors (gravity roller), Dock boards, Loading platform, Loading ramps, Rollers (conveyor), Tongs, Trucks (bag, hand)

See advertisement on page 96

Representatives
Ariz., Phoenix—Kistler Industrial Service, 902 So. Central Ave. AL 2-7217
Calif., Los Angeles—W. T. Billard, Inc., 734 E. Third St. MI 2659
Calif., San Francisco—Hamerslag Equipment Co., 45 Elmira St. JU 7-1357
Colo., Denver — Plant Equipment Co., 1863 Wazee St. AL 5-5413
Ore., Eugene—Air-Mac, Inc., P. O. Box 652
Ore., Portland—Air-Mac, Inc., 1435 S.E. Union Ave. FI 6524
Utah, Salt Lake—Equipment Supply Co., 16 Post Office Pl. 3-9074
Wash., Seattle—Air-Mac Inc., 3838 Fourth Ave. So. MU 3388
Wash., Spokane—Air-Mac, Inc., E. 3710 Trent Ave. KE 0561
Wash., Yakima—Air-Mac, Inc., 313 No. Grandview. 2-1552

MAGNELUX CO., 3316 Rowena Ave., Los Angeles, Calif. NO 5-7710

Trucks of cast magnesium alloy (factory and warehouse, hand).

Representatives
Calif., Los Angeles—Colson Equipment & Supply Co., 1317 Willow St. TR 5743
Calif., Oakland—Colson Equipment & Supply Co., 750 Tenth St. TE 2-3556
Calif., San Francisco—Colson Equipment & Supply Co., 20 Beale St. GA 1-0280
Idaho, Boise—Arnold Machinery Co., 7455 Westwood Dr. 2-1174
Idaho, Idaho Falls—Arnold Machinery Co., 1302 W. Broadway. 3672
Ore., Portland—F. E. Bennett Co., 426 N. W. Sixth Ave. CA 8-2321
Utah, Salt Lake—Arnold Machinery Co., 433 W. Second South St. 22-5631

MAGNESIUM PRODUCTS OF MILWAUKEE, 748 W. Virginia St., Milwaukee 4, Wisc.

Dock boards.

Representatives
Calif., Burlingame—Howard Burt & Sons, 1054 Broadway. DI 2-2058
Calif., Los Angeles — McKinley Equipment Corp., 1003 Santa Fe Ave. MA 6-5651
Ore., Portland—Oregon Handling Equipment Co., 2949 N.W. St. Helens Rd. AT 4196
Wash., Seattle—Cascade Handling Equipment Co., 410 Battery St.

MANHATTAN RUBBER DIV. See **RAYBESTOS-MANHATTAN, INC.**

MANNING, MAXWELL & MOORE, INC., Muskegon, Mich.

Cranes (charging and drawing, gantry, hand power, jib, pillar, swing, bracket, double beam overhead, electric and electric traveling overhead, hand power traveling overhead, I beam overhead), Hoists, (chain, crane, derrick, drum, electric, hand, monorail, portable, traveling), Trolleys.

Branches
Calif., Los Angeles—1320 Rio Vista Ave. AN 3-6133
Calif., San Francisco—1295 Folsom St. UN 1-3870
Wash., Seattle—2302 Second St. No. MA 3496

MARION METAL PRODUCTS CO., Cheney Ave., Marion, Ohio

Dump bodies and hoists (motor truck), Elevating tailgate (truck).

Representatives
Ariz., Tucson—Bogard GMC Co., 2626 So. Fourth Ave. 3-5438
Calif., Fresno—Ruckstell California Sales Co., 410 Broadway 6-4296

Calif., Los Angeles—Truck Bodies Co., 2865 E. 26th St. AN 2-2184
Calif., Oakland—Ruckstell California Sales Co., 2985 Ford St. KE 3-2541
Colo., Denver—Woeber Auto Body & Mfg. Co., 4950 Jackson St. FL 5-2366
Mont., Great Falls—Erwin H. Johnson, Inc., 1101 Third St. N.W. 6-6662
N. Mex., Albuquerque— M & F Equipment Co., 824 Arno St., N.E. 3-3793
Ore., Portland—Pacific Body Builders, Inc., 1812 N.E. Grand. TR 1128
Wash., Spokane—Alloy Mfg. Co., Route 1. MA 8675

MARION POWER SHOVEL CO., 617 W. Center St., Marion, Ohio
Cranes (yard, truck, tractor), Shovels (diesel, electric, crawler mounted).
Branches
Ariz., Phoenix—1017 No. 22nd Ave. AL 2-5371
Calif., So. San Francisco—326 Shaw Ave., JU 3-2350
Ore., Portland—8133 N. E. 87th Pl. KE 8550
Representatives
Calif., Los Angeles—Calavar Corp., 2700 So. Broadway. RI 6292
Calif., Oakland—Buran Equipment Co., 777 100th Ave. TR 2-5335
Ore., Portland—Western Equipment Co., 2244 N. W. Savier St. AT 4128
Wash., Seattle—Star Machinery Co., 241 Lander St. EL 0760

MARKET FORGE CO., 35 Garvey St., Everett, Mass.
Baskets (metal), Carts (hand, push, other), Conveyors (skate), Cranes (electric traveling overhead), Jacks (hydraulic, lift), Loaders (portable, self-propelled), Racks (pallet, storage, other), Stackers (portable electric, portable hand), Tables (elevating, portable), Tractors (electric warehouse, gasoline warehouse), Trailers (factory and warehouse), Trucks (box type, die handling, dolly, elevating or lifting, factory and warehouse, electric fork, gasoline fork, industrial, gasoline lift, hand lift, hand-electric lift, hydraulic lift, power-driven lift, pallet, paper roll, sheet handling, skid handling, straddle, electric tiering), Wheels (conveyor, rubber tired).
Representatives
Calif., Los Angeles—Engineering Products Co., 1600 So. San Pedro St.
Calif., Oakland—Industrial Service Co., 616 McClary Ave.

MARTIN BROTHERS BOX CO., 39 Blucher St., Toledo 1, Ohio
Boxes for shipping (wire bound, wooden)

See advertisement on page 32

Branches
Calif., Compton—Edw. E. Johnson
Calif., San Jose—R. G. Holland
Ore., Oakland—B. L. Martin

MARTIN - DECKER CORP., 3431 Cherry Ave., Long Beach 7, Calif. NE 6-2577
Scales (conveyor, portable, lift truck)
Representatives
Ariz., Phoenix—E. D. Flournoy Co., 420 So. 3rd Ave. AL 2-8607
Calif., Los Angeles—Hoist Specialties Co., 119 So. Western DU 8-2463
N. Mex., Albuquerque—E. D. Flournoy Co., 217 6th St. S. W. 3-1055

MASONITE CORP., 111 W. Washington St., Chicago, Ill.
Masonite Tempered Presdwood boxes, tote boxes, pallets, partitions, panel materials, aisle runners, etc.
Branches
Calif., Los Angeles—1577 Rio Vista. AN 8-7168
Calif., San Francisco—111 Sutter St. YU 6-3696
Representatives
Calif., Pasadena—J. P. Tartaglione, 596 Mar Vista Ave. SY 6-9811
Calif., Pedro Valley—A. J. Rieden, Sea Cliff. FL 5-2432
Calif., Whittier—R. Greenshields, 1244 E. Sixth St.
Wash., Bellevue—J. J. O'Brien, 10808 S. E. 25th Pl. GI 8309

MATHEWS CONVEYOR CO., WEST COAST, 901 County Road, San Carlos, Calif.
Conveyors (apron, automatic, bag and bale, belt, chain or link, continuous flow, drag, flight, foundry, gravity roller, live roller, overhead, pallet, portable, skate, slat, trolley vertical, special), Elevators (barrel, package), Hoists (skip), Wheels (conveyor).

See advertisement on page 64

Branches
Calif., Los Angeles—5527 Sunset Blvd. HO 9-1673
Ore., Portland—1128 S. W. Market St. BE 7901
Wash., Seattle—2615 Western Ave. SE 5718
Representatives
Colo., Denver—Hack Engineering Co., 124 Wazee Market. TA 5-5248
Texas, El Paso—Ponsford Equipment Co., 305 Canal St. 3-8485
Utah, Salt Lake—Industrial Supply Co., 121 Motor Ave. 3-6727
Hawaii, Honolulu—Pressed Steel Car Co., 538 Reed Lane. 5-7162

MAXI CORP., P. O. Box 3129 Terminal Annex, Los Angeles 54, Calif.
Crane carriers (self-propelled).
Representatives
(No authorized dealers—sold through all equipment dealers and distributors who handle a crane and shovel account)

MAY-FRAN ENGINEERING, INC., 1743 Clarkstone Road, Cleveland 12, Ohio
Belting (conveyor, fabric, canvas, steel), Conveyors (apron, belt, portable, slat).
Representative
Calif., South Gate—Cost Reduction Equipment Co., 5200 Chakemco St. LO 7-2487

McKAY CO., 1005 Liberty Ave., Pittsburgh 20, Pa.
Chains, Slings (chain).
Branches
Calif., San Mateo—134 12th Ave. FI 5-3013
N. Mex., Albuquerque—1624 No. First St. 2-3581
Ore., Portland—122 S. W. First Ave. WE 7221
Representatives
Calif., Alhambra—R. C. Fessler Co., 1123 Westminster Ave. CU 3-3181
Ore., Portland—Sheen & Mills, 208 S.W. Stark St. AT 9211
Wash., Seattle—B. P. Rutherford, Inc., 1954 First Ave. So. EL 1954

MECHANICAL HANDLING SYSTEMS, INC., 4600 Nancy Ave., Detroit
Conveyors (apron, automatic, bag and bale, belt, bucket, chain or link, continuous flow, drag, flight, foundry, gravity roller, live roller, overhead, pallet, pneumatic, portable, screw, skate, slat, trolley, vertical, special and other), Elevators (barrel, package, belt, bucket, continuous flow), Racks (pallet, storage, other), Wheels (conveyor).
Representative
Calif., Gardena—Alden Equipment Co., 1449 W. Rosecrans. DA 9-6341

MEFCO SALES & SERVICE CORP., 1509 Gardena Ave., Glendale 4, Calif. CH 5-3186
Crane and hoist lowering and hoisting controls.

See advertisement on page 141

MERCURY MFG. CO., 4044 So. Halsted St., Chicago 9, Ill.
Tractors (electric warehouse, gasoline warehouse), Trailers (factory and warehouse), Trucks (dolly, electric fork, hand industrial, electric tiering), Wheels (trailer).
Representatives
Calif., Los Angeles—McKinley Equipment Co., 1003 Santa Fe Ave. MA 6-5651
Calif., San Francisco—Hamerslag Equipment Co., 45 Elmira St. JU 7-1357
Colo., Denver—Plant Equipment Co., 1863 Wazee St. AL 5413
Wash., Seattle—Charles Industrial Sales Co., 5201 First Ave. So. RA 4135

METZGAR CONVEYOR CO., 412 Douglas St., N. W., Grand Rapids 4, Mich.
Conveyors (bag and bale, belt, flight, gravity roller, live roller, pallet, portable, skate, special and other).
Representatives
Calif., Los Angeles—Shipping Room Supply Co., 1547 Estudillo Ave. AN 1-2194
Calif., Oakland—Ed. M. Vallejo Co., 3907 Lyon Ave. KE 2-4564
Ore., Portland—F. E. Bennett Co., 426 N. W. Sixth St. AT 2521
Wash., Seattle—Materials Handling Equipment Co., 2963 First St. SE 0997
Wash., Spokane—Standard Cycle & Supply, 1811 E. Sprague Ave. LA 1321

MODERN CRANE & CONVEYOR CO., 8660 Atlantic Ave., South Gate, Calif.
Conveyors (drag, overhead, trolley), Cranes (gantry, hand power, jib, pillar, swing, double beam overhead, electric and electric traveling overhead, hand power traveling overhead, I beam overhead, monorail overhead).
Representative
N. Mex., Albuquerque—George Mayhew Co., P. O. Box 8301 Phone 5-8385

MOFFETT ENGINEERING CO., 579 Cleveland Ave., Albany 6, Calif. LA 5-4916
Cranes (gantry, hand power, jib, pillar, swing, double beam overhead, electric and electric traveling overhead, foundry overhead, hand power traveling overhead, I beam overhead), Hoists (air, bucket, chain, crane, derrick, drum, electric, hand, monorail, portable, skip, tracking, other), Loaders,

See advertisement on page 16

MONARCH RUBBER CO., 50 Lincoln Park, Hartville, Ohio
Tires.

See advertisement on page 133

Representatives
Ariz., Phoenix—Robert H. Braun Co., 2308 So. 11th Ave.
Calif., Fresno—Robert H. Braun Co., 1908 Mary St.
Calif., Los Angeles—Robert H. Braun Co., 5519 Jillson
Calif., Oakland—Glen L. Codman Co., 10521 Pearmain St.
Calif., Sacramento—Glen L. Codman Co., 3200 J St.
Calif., San Diego—Robert H. Braun Co., 2208 Imperial
Ore., Medford—Robert Dodd Co.
Ore., Portland—Robert Dodd Co., 238 N. E. Oregon
Wash., Seattle—Preston Faller Co., 1921 Minor Ave.
Wash., Spokane—Preston Faller Co., E. 4324 Trent

MOTO-TRUC CO., 1953 E. 59th St., Cleveland 3, Ohio
Tractors (electric warehouse), Trucks (electric fork, motorized hand, hand-electric lift, pallet, skid handling, straddle, electric tiering).

See advertisement on page 29

Representatives
Calif., Los Angeles—Glenn A. Harshbarger, 3517 San Fernando. CL 6-2132
Calif., San Francisco—Elder & Co., 390 Seventh St. UN 1-5480
Colo., Denver—Armstrong Caster Co., 465 Santa Fe Dr. AC 2-3777
Ore., Portland—Oregon Handling Equipment, 2949 N. W. St. Helens. AT 4196
Wash., Seattle—Mechanical Handling Co., 1401 W. Garfield. AL 8388

MULTAFRAME OF CALIFORNIA, INC., 7333 Coldwater Canyon, North Hollywood, Calif. ST 7-3367
Boxes, tote, Carts (hand, push), Pallets, Racks (pallet, storage, other).

NASHUA PACKAGE SEALING DIV., NASHUA CORP., 44 Franklin St., Nashua, N. H.
Tape dispensers (electric, manual), Sealing tape (gummed, plain, printed, glass reinforced).
Representatives
Calif., San Mateo—John N. Brigham, 3109 Monterey
Calif., Van Nuys — Thurlo E. Ross, 14243 Haynes St.
Colo., Denver—C. S. Graves, 1280 Humboldt St.
N. Mex., Albuquerque—Lawrence Tulley, P. O. Box 376
Ore., Portland—Bert E. Chinn, 13515 S. E. Lauri
Utah, Salt Lake—Earl E. Priest, 8 W. Fourth North St.
Wash., Seattle—Melvin J. Mahlstrom, 101 Jones Bldg.

NATIONAL PNEUMATIC CO., see **HOLZER-CABOT DIV.**

NATIONAL SCREW & MFG. CO., see **CHESTER HOIST DIV.**

NATIONAL VULCANIZED FIBRE CO., Maryland Ave. and Beach St., Wilmington 99, Del.
Barrels (fibre), Baskets (fibre), Boxes shipping (fibre), Boxes, tote (fibre), Trucks (box type, dolly, factory and warehouse, pallet).

See advertisement on page 138

Branches
Calif., Los Angeles—2325 E. Eighth St. VA 7131
Calif., San Francisco—273 Seventh St. UN 1-6116
Representatives
Colo., Denver—George Hamburger, 1253 Pearl St.
Wash., Seattle—John J. Witherow, 4001 Whitman Ave. ME 7298

NEW LONDON ENGINEERING CO., 1700 Division St., New London, Wisc.
Conveyors (bag and bale, belt, foundry, portable, special and other), Pulleys (conveyor).
Representatives
Ariz., Phoenix—Lee Redman Equipment Co., 610 So. 19th St.
Ariz., Phoenix—O. S. Stapley Co., 723 Grand Ave.
Ariz., Phoenix—Western Machinery Co., 124 E. Buchanan St.
Calif., Los Angeles—Smith-Booth-Usher Co., 2001 Santa Fe Ave.
Calif., Pomona—Keville Industrial Service, 1590 Ganesha Pl.
Calif., Santa Clara—Cole Equipment & Supply Co., 956 Main St.
Colo., Denver—Western Machinery Co., 1004 Speer Blvd.
Colo., Denver—Waco Scaffolding Div., Prof. Paints, Inc., 3600 E. 45th Ave.
Colo., Grand Junction—S & M Supply Co., 735 Fourth Ave.
Idaho, Boise—Engineering Sales Service, 410 Capitol Blvd.
N. Mex., Albuquerque—Contractors Equipment & Supply Co., 708 Broadway N. E.
Ore., Portland—Contractors Equipment Corp. P. O. Box 2191
Utah, Salt Lake—Modern Equipment Co., 52 W. Second South St.
Utah, Salt Lake—Equipment Supply Co., 16 Post Office Pl.
Wash., Seattle—Glenn Carrington & Co., 91 Columbia St.

NEW YORK BELTING & PACKING CO., 1 Market St., Passaic, N. J.
Belting (conveyor, elevator, endless, other), Conveyors (belt), Elevators (belt), Slings (belt).
Branches
Calif., Los Angeles—1733 E. 15th St. RI 9-3802
Calif., San Francisco—6025 Third St. MI 8-3424
Representatives
Calif., Fresno—Central Supply Co., 426 M St. 3-0243
Calif., Los Angeles—Degen-Fiege Co., 1733 E. 15th St. RI 8-2281
Calif., Oakland—Viking Supply Co., 1276 W. Grand Ave. HI 4-6984
Colo., Denver—Hendrie & Bolthoff Co., 1635 17th St. KE 4-4111
Ore., Portland—Woodbury & Co., 133 S. W. Second Ave. AT 6641
Utah, Salt Lake—Rocky Mountain Machinery Co., 1485 So. Second West St. 84-4378

NICHOLS CONVEYOR & ENGINEERING CO., INC., 2646 Downey Rd., Los Angeles 23, Calif. AN 3-3809 and AN 3-7874
Conveyors (belt, bucket), Cranes (jib), Elevators (belt, bucket, other), Hoists (hydraulic).

See advertisement on page 163

NOBLE CO., 1860 Seventh St., Oakland 20, Calif. TE 2-5785
Conveyors (belt, screw), Cranes (gantry, double beam overhead, electric traveling overhead, foundry overhead), Elevators (bucket), Automatic scales

NORTHWEST ENGINEERING CO., 135 So. LaSalle St., Chicago 3, Ill.
Yard cranes (truck, tractor).
Branches
Calif., Los Angeles—3707 Santa Fe Ave. LU 7-2196
Calif., San Francisco—255 Tenth St. HE 1-5060
Wash., Seattle—1234 Sixth Ave. So. SE 2201
Representatives
Ariz., Phoenix—Superior Equipment Co., 2402 S. 19th Ave. AL 2-3116
Colo., Denver—Power Equipment Co., 3440 Brighton Blvd. KE 4-4221
Idaho, Idaho Falls—Arnold Machinery Co., Inc., 1302 Broadway. 3672
Mont., Billings—Industrial Equipment Co., 415 N. 27th St. 2-2158
Mont., Great Falls—Normont Equipment Co., 420 3rd St. So. 6-6527
Nev., Reno—Sierra Machinery Co., 307 Morrill Ave. 3-1301
N. Mex., Albuquerque—Lively Equipment Co., 2601 Fourth St. 4-3411
Ore., Medford—Cal-Ore Machinery Co., Inc., 944 So. Central Ave. ME 2-6155
Ore., Portland—Balzer Machinery Co., 2136 S. E. Eighth Ave. EA 2143
Utah, Salt Lake—Arnold Machinery Co., Inc., 433 W. Second So. 22-5631
Wash., Spokane—General Machinery Co., E. 3500 Riverside Ave. KE 1535
Wash., Wenatchee—Mid-State Equipment Co., 313 N. Mission St. NO 2-7151
Wyo., Cheyenne—Keremi Tractor & Equipment Co., 902 W. 22nd St. 8-8923

NUTTING TRUCK & CASTER CO., 1201 W. Division St., Faribault, Minn.
Carts (hand, push), Casters, Trucks (bag, barrel, drum, box type, die handling, dolly, factory and warehouse, hand, pallet, paper roll, sheet handling), Wheels (hand truck, rubber tired).

See advertisement inside back cover

Representatives
Ariz., Tucson—L. J. Clarke & Co., 246 E. Seventh St. 4-6233
Calif., Los Angeles—H. Stewart & Associates, 1547 Estudillo Ave. AN 1-2194
Calif., Oakland—E. C. Buehrer Associates, 351 Fifth St. TE 6-2082
Colo., Denver—McDonald-Hunt Scale & Supply Co., 1540 Wazee St. AC 2-5651
Ore., Portland—F. E. Bennett Co., 426 N. W. Sixth Ave. AT 2321
Utah, Salt Lake—Equipment Supply Co., 16 Post Office Pl. 3-9074
Wash., Seattle—Secord Sales Co., 95 Connecticut St. MA 0737
Wash., Spokane—H. H. McVeigh, W. 310 First Ave. RI 5927

OHIO HOIST & MFG. CO., 13124 Shaker Square, Cleveland 20, Ohio
Chains (chain or link), Cranes, (gantry, hand power, jib, pillar, swing, bracket, double beam overhead, hand power traveling overhead, I beam overhead, locomotive overhead, monorail overhead), Hoists bucket, chain, crane, derrick, drum, electric, gasoline, hand, hydraulic, monorail, portable, skip, traveling), Slings (chain), Trolleys, Trucks (electric fork, hand, hand lift, hand-electric lift, hydraulic lift, power-driven lift, pallet), Winches and Windlasses.
Branch
Calif., San Francisco—461 Market St. EX 2-3233
Representatives
Calif., Los Angeles—Cohn & Shane, Inc., 1323 Venice Blvd. DU 8-9374
(Through auto and hardware jobbers in all Western states)

OHIO TRAMRAIL DIV., THE FORKER CORP., 2044 Random Rd., Cleveland 6, Ohio
Cranes (gantry, hand power, jib, pillar, swing, bracket, double beam overhead, electric and electric traveling overhead, foundry overhead, hand power traveling overhead, I beam overhead, monorail overhead), Hoists (air, chain, crane, electric, hand, monorail, traveling), Scales (monorail), Trolleys.
Representatives
Calif., Los Angeles—Modern Crane & Conveyor Co., 8660 Atlantic Ave. LO 5-5431
Calif., San Francisco—Stryco Mfg. Co., 470 Natoma St. SU 1-8310
Colo., Denver—Urban M. Lodge, 2689 So. Jackson. AL 5-6127
Ore., Portland—Hallidie Machinery Co., 1545 S. E. Union FI 7491
Wash., Seattle—Hallidie Machinery Co., 2 Hudson St. LA 9520

OLIVER CORP., 400 W. Madison St., Chicago, Ill.
Conveyors (belt, continuous flow, drag, gravity roller, live roller), Loaders (portable, self-propelled), Tractors.
Branches
Calif., Los Angeles—4330 District Blvd. LU 7-3297
Calif., Oakland—1066 47th Ave. KE 2-2511
Ore., Portland—130 S.E. Morrison St. EA 5124
Representatives
Ariz., Phoenix—Arizona Equipment Sales, Inc., 2812 Grand Ave.
Calif., Bakersfield—Motor Truck Sales & Service, 115 Union Ave.
Calif., Chico—Cal-Butte Tractor Co., 24th and Park Ave.
Calif., Colton—Condosta Tractor Co., P. O. Box 351
Calif., Cotati—Tractor Specialties Co., P. O. Box 216
Calif., Eureka—Gustafson Tractor Co., 109 W. Fourth St.
Calif., Los Angeles—Le-Roi Rix Machinery Co., 6403 E. Slauson Ave.
Calif., Napa—Warner-Ritz Tractor & Equipment Co., 2032 Napa-Vallejo Hwy.
Calif., Redding—Lowey Equpment Co., P. O. Box 1027
Calif., Sacramento—Flood Equipment Co., 2200 Alhambra
Calif., Salinas—Ashton Implement Co., 1280 No. Main St.
Calif., San Diego—Willis Tractor & Equipment Co., 1322 K St.
Calif., San Jose—MFD Distributors, Inc., 1650 So. First St.
Calif., San Leandro—MFD, Inc., P. O. Box 3205
Calif., Stockton—H & M Tractor Co., 620 So. Wilson Way
Idaho, Boise—Engineering Sales Service, Inc., 410 Capitol Blvd.
Idaho, Lewiston—Idaho Cletrac Sales Co., 1515 Main St.
Mont., Helena—Caird Engineering Works, P. O. Box 837
Ore., Eugene—Loggers & Contractors Machinery Co., 540 Fillmore St.
Ore., Portland—Loggers & Contractors Machinery Co., 240 S. E. Clay St.
Utah, Salt Lake—Arnold Machinery Co., 433 W. Second South St.
Wash., Puyallup—Pacific Hoist & Derrick Co., 625 No. Meridian
Wash., Seattle—Pacific Hoist & Derrick Co., 3200 Fourth St. So.
Wash., Spokane—Inland Diesel & Machinery Co., E 7 Third Ave.
Wash., Walla Walla—Melcher-Ray Machinery Co., 1014 So. Ninth St.

PACIFIC CAR & FOUNDRY CO., Fourth and Factory, Renton, Wash. OL 4511
Carts (log), Cranes (tractor, booms), Hoists (tractor, drum), Winches (tractor), Rigging.

PACIFIC COAST – RAPIDS

PACIFIC COAST ENGINEERING CO., P. O. Drawer E, Alameda, Calif.
Cranes (gantry, bracket, double beam overhead, electric overhead, foundry overhead), Hoists (crane, drum, hydraulic, skip, traveling).
Representative
Calif., Pasadena—Jacobs Engineering Co., 3018 E. Foothill Blvd. RY 1-9373

PACIFIC COAST INDUSTRIAL EQUIPMENT CORP., P. O. Box 36008, Los Angeles 36, Calif. WE 8-6201
Baskets (metal), Carts, Conveyors (belt, chain or link, continuous flow, drag, flight, overhead, portable, slat, trolley), Cranes (double beam overhead, electric and electric traveling overhead, foundry overhead hand power traveling overhead, I beam overhead, monorail overhead), Hoists (electric), Trolleys, Trucks (factory and warehouse), Wheels (conveyor, general industrial).

See advertisement on page 147

PACIFIC PUMPS, INC., 5715 Bickett St., Huntington Park, Calif. LU 8-2203
Pumps.
Representatives
Ariz., Phoenix—Lee Redman Equipment Co., 610 So. 19th Ave. AL 8-3794
Calif., San Francisco—Transmission Engineering Co., 53 Stevenson St. SU 1-4738
Utah, Salt Lake—The Lang Co., 267 W. First South St.. 3-5831
Wash., Edmonds—William T. Spates Co., 9709 220 S. W.

PACIFIC WIRE ROPE CO., 1840 E. 15th St., Los Angeles 21, Calif.
Wire rope.
Branches
Calif., San Francisco—681 Market St. EX 7-1372
Ore., Portland—3615 N. W. St. Helens Rd. BE 3188

PALMER-SHILE CO., 1600 Fullerton Ave., Detroit, Mich.
Baskets (metal), Boxes, tote, Elevators (portable tiering), Grabs, Pallets, Racks (pallet, storage, other), Slings (wire rope, other), Stackers (portable electric, portable hand), Tables (elevating, portable, other), Tongs, Trailers (factory and warehouse), Trucks (bag, barrel, drum, box type, die handling, dolly, elevating or lifting, factory and warehouse, hand).
Representative
Calif., Burlingame—W. P. Wooldridge Co., 1209 Burlingame Ave. DI 2-0823
Calif., Los Angeles—W. P. Wooldridge Co., 6440 Fleet St. RA 3-3733
Colo., Denver—Case Material Handling Co., 3301 Walnut St. AL 5-3984

PALTIER CORP., 1701 Kentucky St., Michigan City, Ind.
Boxes for shipping, Racks (pallet, storage, other).
Representatives
Calif., Los Angeles—Davis Material Handling Co., 5649 Alhambra. CA 2-7192
Calif., San Francisco — Western Industrial Equipment Co., 420 Market St. SU 1-4757

PARAMOUNT MFG. CO., 1615 East Main St., Stockton 1, Calif. HO 6-8519
Conveyors (belt, chain or link, continuous flow, flight, portable), Elevators (belt, continuous flow), Tables (conveying, other).
Branch
Calif., Shafter—588 E. Lerdo. Phone 362
Representatives
Colo., Monte Vista—Bockhaus Mfg. Co.
Idaho, Idaho Falls—Pacific Diamond H Bag Co.
Idaho, Twin Falls—Pacific Diamond H Bag Co.
Wash., Sunnyside—Paramount Sales & Service

PARAMOUNT IN THE WEST among industrial publications is Western Industry, 609 Mission St., San Francisco 5, Calif.

THE PARKDALE CO., 3040 Rosslyn St., Los Angeles 65, Calif.
Trucks (LP gas conversion equipment)

See advertisement on page 156

Representatives
Calif., Fresno—Cities Fuel Corp., P. O. Box 365
Calif., Fresno—Acme Butane
Calif., Los Angeles—Butane Carburetor Service, 1206 E. Sixth St. VA 7771
Calif., Oakland—Electric Service Co., 643 E. Eighth St. TE 4-9944
Calif., Thermal—Thermal Gas, Inc.
Wash., Lynden—Northwest Propane Sales Co., 512 Third St.

PEERLESS CHAIN CO., River & Walnut Sts., Winona, Minn.
Chains.
Representatives
(Hardware jobber distribution in all major Western cities).

PENCO ENGINEERING CO., 25 California St., San Francisco 11, Calif. SU 1-1963
Dock Boards, Loading ramps.

See advertisement on page 144

Representatives
(Distributors in all principal cities)

PHILADELPHIA CHAIN BLOCK & MFG. CO., INC., Mascher and Norris Sts., Philadelphia 22, Pa.
Chains, Cranes (hand power), Hoists (chain, hand), Slings (chain), Trolleys.
Representatives
Calif., Huntington Park—Pete Miller Co., 7810 Salt Lake Ave. LO 5-2616
Calif., San Francisco—Robert M. Taylor Co., 268 Market St. YU 2-1760
Colo., Denver—Lyle Wolfe Co., 1126 12th St., KE 8857
Ore., Portland—McMahon Bros., 337 Pittock Block. AT 6878
Wash., Seattle—F. J. Crowe Co., 325 Second Ave. W. AL 8844

PITTSBURGH STEEL PRODUCTS CO., P. O. Box 118, Pittsburgh 30, Pa.
Baskets (wire), Boxes for shipping (wire), Pallets, Bulkheads (railroad shipping).
Branches
Calif., Los Angeles—Statler Center. MA 5-1456
Calif., San Francisco — 681 Market St. YU 2-0474
Representatives
Utah, Salt Lake—Utah Lumber Co., 338 W. First South St.
Wash., Seattle—L. A. Timmerman, 1114 Post St.

H. K. PORTER, 74 Foley St., Somerville 43, Mass.
Cutters (strapping, wire rope).
Branches
Calif., San Francisco—24 California St. YU 2-3186
Ore., Portland—309 S. W. Third Ave.
Wash., Seattle—Third Ave & Cherry St.

POWELL PRESSED STEEL CO., Erie St., Hubbard, Ohio
All steel tote boxes, skid platforms, box platforms, pallets, and production boxes and stands.
Representatives
Calif., Los Angeles—J. W. Lafferty Co., 5422 E. Washington Blvd. RA 3-5233
Calif., San Francisco—Ira G. Perin Co., 575 Howard St. GA 1-1827
Colo., Denver—McDonald-Hunt Scale & Supply 1540 Wazee St. AC 5651
Ore., Portland — Air-Mac, Inc., 1435 S.E. Union Ave. FI 6524
Utah, Salt Lake—Equipment Supply Co., 16 Post Office Pl. 3-9074
Wash., Seattle—Air-Mac, Inc., 3838 Fourth Ave. So. MU 3388

POWER-CURVE CONVEYOR CO., 2185 So. Jason St., Denver, Colo.
Conveyors (bag and bale, portable), Elevators, Loaders (portable, self-propelled).
Representative
Calif., Pasadena—Empire Engineering Co., 385 E. Green St. RY 1-6178

GEO. M. PRESCOTT CO., 825 So. Fremont Ave., Alhambra, Calif.
Conveyors (overhead, portable, trolley), Jacks (lift), Rollers (conveyor), Trailers (factory and warehouse), Trucks (box type, hand, pallet, sheet handling, skid handling).
Representatives
Ariz., Phoenix—Kistler Industrial Service, 902 So. Central AL 2-7217
Calif., Oakland—E. C. Buehrer Associates, 351 Fifth St. TE 6-2082
Idaho, Idaho Falls—Arnold Machinery Co., 1302 W. Broadway. 3672
Ore., Portland—John W. Negus Co., 3005 N.E. Sandy Blvd. FI 8515
Utah, Salt Lake—Arnold Machinery Co., 433 W. Second South St. 22-5631

"QUICK-WAY" TRUCK SHOVEL CO. 2401 E. 40th Ave., Denver 8, Colo.
Cranes (yard, truck)
Branches
Calif., Los Angeles—1434 Peerless Place
Wash., Bellevue—10550 N .E. 24th. GI 1061
Representatives
Ariz., Phoenix—Equipment Sales Co., 729 S. 19th Ave. AL 4-4786
Calif., Los Angeles—Harron-Richard & McCone Co., 3850 Santa Fe Ave. LO 5-8361
Calif., San Francisco—Edw. R. Bacon Co., 2101 Folsom St. HE 1-3700
Colo., Denver—H. W. Moore Equipment Co., 5990 Colorado Blvd. AT 8-0771
Mont., Butte—Hall-Perry Machinery Co., 808 E. Iron St. 2-2323
N. Mex., Albuquerque—J. D. Coggins Co., 1717 No. Second St. 3-5505
Ore., Portland—Columbia Equipment Co., 1240 S. E. 12th Ave.
Ore., Portland—Nelson Equipment Co., 5251 S. E. McLoughlin Blvd.
Utah, Salt Lake—Arnold Machinery Co., 433 W. Second South St., 22-5631
Wyo., Cheyenne—Keremi Tractor & Equipment Co., 902 W. 22nd St. 8-8923
Wyo., Cheyenne—Keremi Tractor & Equipment Co., 902 W. 22nd St. 8-8923

R & K INDUSTRIAL PRODUCTS CO., 1945 No. 7th St., Richmond, Calif.
Wheels (general industrial, hand truck, rubber tired).
Representatives
Calif., Los Angeles—Colson Equipment & Supply Co., 1317 Willow St. TR 5743
Colo., Denver—Joe Coursey Equipment Co., 1243 Walnut St.
Ore., Portland—F. E. Bennett, 426 N. W. Sixth Ave. AT 2321
Wash., Seattle—Air-Mac, Inc., 3838 Fourth Ave. MU 3388

RACK ENGINEERING CO. OF CALIF., 783 E. 182nd St., Los Angeles, Calif.
Racks (pallet, storage, other), Tables (elevating), Trucks (box type).

See advertisement on page 83

Representatives
Calif., Los Angeles—Jas. P. Kinney Co., 5141 Telegraph Rd. AN 9-7411
Calif., San Francisco—Industrial Truck Sales, 563 Second St. YU 6-4261
Colo., Denver — Hahn Equipment Co., 1745 Blake St. KE 4-5500
Wash., Seattle—Material Handling Equipment Co., 2963 First St. SE 0997

RAPIDS STANDARD CO., 342 Rapistan Bldg., Grand Rapids 2, Mich.
Casters, Conveyors (belt, continuous flow, gravity roller, live roller, overhead, pallet, portable, skate, vertical), Rollers (conveyor), Stackers (portable electric), Trucks (hand), Wheels (conveyor, hand truck, rubber tired).

See advertisement on page 148

Representatives
Calif., San Francisco—Rapistan of Calif., 444 Brannan St., YU 2-3880
Colo., Denver—Murray Sales Co., 16 Wazee Market. KE 4-5296

Ore., Portland—Air-Mac, Inc., 1435 S. E. Union Ave., FI 6524
Utah, Ogden—The Horseley Co., 2416 Grant Ave. 2-1847
Wash., Seattle—Air-Mac, Inc., 3838 Fourth Ave. So. MU 3388

RAYBESTOS - MANHATTAN, INC., MANHATTAN RUBBER DIV., 61 Willett St., Passaic, N. J.

Belting (conveyor, fabric, canvas, elevator, endless), Conveyors (belt, bucket, chain or link), Elevators (belt, bucket), Slings (belt).

Branches

Calif., Los Angeles—4651 Pacific Blvd.
Calif., San Francisco—131 Mission St.
Ore., Portland—1220 S. W. Stark St.
Wash., Seattle—2440 Sixth Ave. So.

RAYMOND CORP., 161 Madison St., Greene, N. Y.

Elevators (portable tiering), Stackers (electric portable, hand portable), Tables (elevating). Trucks elevating or lifting, electric fork, industrial, hand lift, hand-electric lift, hydraulic lift, power-driven lift, pallet, skid handling, straddle, electric tiering).

Representatives

Calif., Los Angeles—W. T. Billard, Inc., 734 E. Third St. MI 2659
Calif., San Francisco—Rapistan of California, Inc., 444 Brannan St. YU 2-3880
Ore., Portland—Air-Mac, Inc., 1435 S.E. Union Ave. FI 6524
Wash., Seattle—Air-Mac, Inc., 3838 Fourth Ave. So. MU 3388
Wash., Spokane—Air-Mac, Inc., E. 3710 Trent Ave. KE 0561

REEVES PULLEY CO., 1225 Seventh St., Columbus, Ind.

Belting, Pulleys, Variable speed drives and controls.

Branches

Calif., Maywood—3652 E. Slauson Ave. LO 8-2196
Calif., San Francisco—901 Minnesota St., MI 7-3340

Representatives

Colo., Denver—Hamilton Associates, 1236 Elati St. CH 1505
Ore., Portland—Pacific Coast Products, 930 S. E. Oak St. VE 3177
Utah, Salt Lake—Lundin & May Foundry Co., 454 W. Fifth No. 9-2005
Wash., Seattle—Western Gear Works, 417 Ninth Ave. So. MA 0062

REPUBLIC RUBBER DIV., LEE RUBBER & TIRE CORP., 1410 Albert St., Youngstown, Ohio

Belting (conveyor, elevator, endless), Slings (belt), Hose.

Representatives

Calif., Los Angeles—Hendrie Belting & Rubber Co., 405 Towne Ave.
Calif., San Francisco—Pacific Coast Rubber Co., 51 Main St.
Ore., Portland—J. E. Haseltine & Co., 115 S. W. Second Ave.
Wash., Seattle—B & J Equipment Co., 2244 First Ave.
Wash., Spokane—General Machinery Co., Station B.
Wash., Tacoma—DuCharme Belting & Rubber Co., 501 E. 34th St.

REPUBLIC STEEL CORP., Republic Bldg., Cleveland 1, Ohio

Barrels (shipping, steel), Bins, Boxes (shipping, tote), Chains, Hoists (chain, electric), Pallets, Racks, (pallet), Slings (chain).

Branches

Calif., Los Angeles—M-H Equip., General Petroleum Bldg. MI 5144
Calif., Los Angeles—Chain Div., 2900 E. 44th St. KI 9218
Calif., San Francisco—M-H Equip., 225 Rialto Bldg. GA 1-0977
Calif., So. San Francisco—Chain Div., 196 Freeway, PL 6-0088
Colo., Denver—M-H Equip., 405 Continental Oil Bldg. MA 3-5289
Colo., Denver—Berger Div., 2995 Quitman St. GL 5-3837
Ore., Portland—Berger Div., 1801 N.W. Northrup St. CA 6944
Ore., Portland—Chain Div., 2258 N.W. Raleigh St. BR 6476
Wash., Seattle—M-H Equip., 6636 White-Henry-Stuart Bldg. HA 1195
Wash., Seattle—Chain Div., 6921 E. Marginal Way. RA 3800

Representatives

Calif., Fresno—Petley, Inc., Anglo Bank Bldg.
Calif., Los Angeles—Petley, Inc., 5424 E. Slauson Ave. RA 3-3327
Calif., Oakland—Petley, Inc., 899 73rd Ave. TR 2-7621
Ore., Portland—The Thom Co., 7427 N. Denver Ave.

REVOLVATOR CO., Tonnele Ave. and 86th St., North Bergen, N. J.

Cranes (hand power), Elevators (portable tiering), Racks, Stackers (portable electric, portable hand), Tables (elevating), Trucks (elevating or lifting, electric fork, motorized hand, industrial, hand lift, hand-electric lift, hand-mechanical lift, hydraulic lift, power-driven lift, skid handling, electric tiering).

See advertisement on page 54

Representatives

Calif., Los Angeles—J. W. Lafferty Co., 5422 E. Washington Blvd. RA 3-5233
Calif., San Francisco—Ira G. Perin Co., 575 Howard St. GA 1-1827
Ore., Portland—Oregon Handling Equipment Co., 2949 N.W. St. Helens Rd.
Wash., Seattle—Cascade Handling Equipment Co., 911 Western Ave. MA 7069

RHEEM MFG. CO., 4361 Firestone Blvd., South Gate, Calif. LO 5-8686

Barrels for shipping (fibre, steel).

See advertisement on page 5

Branches

Calif., Richmond—800 Chesley Ave. BE 4-7114
Wash., Seattle—3693 E. Marginal Way. MA 7620

J. E. RHOADS & SONS, 2100 W. 11th St., Wilmington, Del.

Belting (leather), Belt fastenings and belt lacings, Pulleys, Strapping.

Representatives

Calif., Los Angeles—R. H. Hergert, 122 E. Seventh St.
Calif., San Francisco—H. N. Cook, 401 Howard St.
Ore., Portland—C. L. Koerner, 12200 S. E. Oakfield Rd.

RICHARDSON SCALE CO., 668 Van Houten Ave., Clifton, N. J.

Feeders (vibrating), Scales (automatic, conveyor, packaging, portable).

Branch

Calif., San Francisco—580 Market St. SU 1-3724

RICHARDS-WILCOX MFG. CO., 174 Third St., Aurora, Ill.

Conveyors (automatic, chain or link, continuous flow, foundry, overhead, trolley, special), Cranes (hand power, jib, pillar, swing, bracket, double beam overhead, electric and electric traveling overhead, foundry overhead, hand power traveling overhead, I beam overhead, monorail overhead), Hoists (monorail), Trolleys (monorail), Wheels (conveyor).

See advertisement on page 71

Branches

Calif., Los Angeles—909 Santa Fe Ave. VA 8197
Calif., San Francisco—288 Seventh St. MA 1-6448
Colo., Denver—1217 Bannock St. AC 2-0681
Wash., Seattle—2922 Blakeley. VE 3231

ROBBINS & MEYERS, INC., HOIST & CRANE DIV., 1345 Lagonda Ave., Springfield, Ohio

Cranes (gantry, hand power, double beam overhead, electric and electric traveling overhead, foundry overhead, hand power traveling overhead, I beam overhead, monorail overhead), Hoists (chain, crane, drum, electric, hand, monorail, portable, traveling), Winches and Windlasses.

Representatives

Calif., Huntington Park—A. B. Miller, 1810 Salt Lake Ave.
Colo., Denver—Hahn Equipment Co., 1745 Blake St.
N. Mex., Albuquerque—E. D. Flournoy Co., 217 S. Sixth St.
Ore., Portland—C. L. Koerner, 12200 S. Oatfield Rd.
Utah, Salt Lake—The Galigher Co., 545 W. Eighth South St.
Wash., Seattle—F. T. Crowe & Co., Inc., 325 Second Ave. West

JOHN A. ROEBLING'S SONS CORP., 640 So. Broad St., Trenton 2, N. J.

Slings (wire rope), Wire rope.

Branches

Calif., Los Angeles—5340 E. Harbor St. RA 3-6421
Calif., San Francisco—1740 17th St. MA 1-8787
Colo., Denver—4801 Jackson St. FR 7-2769
Wash., Seattle—900 First Ave. So. MA 4992

ROLL RITE CORP., 801 Jefferson St., Oakland 7, Calif. GL 1-5921

Carts (hand, push, other), Casters, Conveyors (pallet), Dock boards, Loading platforms, Racks (pallet, storage, other), Loading Ramps, Tires (industrial truck and trailer), Trailers (factory and warehouse), Trucks (bag, barrel, drum, box type, dolly, factory and warehouse, hand, pallet), Wheels (general industrial, hand truck, rubber tired).

See advertisement on page 152

ROTARY LIFT CO., 1054 Kansas St., Memphis 2, Tenn.

Cranes (jib, pillar, swing, bracket), Dock boards, Elevators, Hoists (hydraulic, locomotive), Jacks (hydraulic), Platforms (loading), Ramps, Tables (elevating).

Branches

Calif., Pacific Palisades—727 Chapala Dr.

Representatives

Ariz., Phoenix—Phoenix Elevator Co., Title and Trust Bldg.
Calif., Fresno—Valley Elevator Co., 921 L St.
Calif., Los Angeles—Elevator Maintenance Co., 1316 Glendale Blvd.
Calif., Oakland—Moody, Sweazey & Rowe, 814 Alice St.
Calif., Sacramento—Valley Elevator Co., 1606 D St.
Calif., San Jose—San Jose Elevator Co., 1016 Stockton Ave.
Colo., Denver—Wm. Colin Kirk & Associates, 1197 Stout St.
Colo., Denver—Union Supply Co., 5460 Colorado Blvd.
N. Mex., Albuquerque—Hunter-Hayes Elevator Co., 106 Buena Vista S.E.
Ore., Portland—Oregon Elevator Co., P.O. Box 546
Utah, Salt Lake—The Lang Co., 267 W. First St.
Utah, Salt Lake—Elevator Service & Supply Co., 36 E. Ninth South St.
Wash., Seattle—Sound Elevator Co., 2718 Elliott Ave.
Wash., Spokane—Spokane Elevator Co., 2940 E. Trent St.
Wash., Tacoma—Globe Machine Manufacturing Co., 301 E. 11th St.

ROURA IRON WORKS, 1401 Woodland Ave., Detroit, Mich.

Self-dumping hoppers for use with fork or platform type lift trucks.

Representatives

Calif., Los Angeles—James P. Kinney Co., 5141 Telegraph Rd. AN 9-7411
Calif., Oakland—Glen C. Codman Co., 10521 Pearmain St. SW 8-9100

SAGINAW PRODUCTS CORP., 68 Williamson St., Saginaw, Mich.

Casters, Conveyors (gravity roller, overhead), Jacks (screw), Rollers (conveyor), Trailers (factory and warehouse), Trolleys, Trucks (factory and warehouse, hand), Wheels (conveyor, general industrial, hand truck, rubber tired, tractor, trailer).

Representatives

Calif., Berkeley—Walter E. Weyman, 1465 Fourth St.
Calif., Los Angeles—W. H. Del Mar Co., 3931 W. Slauson Ave.

SALES GO UP in the West for firms advertising in Western Industry

SASGEN DERRICK CO., 3101 W. Grand Ave., Chicago 22, Ill.

Cranes (hand power), Elevators, Hoists (derrick, drum, electric, gasoline, hand), Winches and Windlasses.

Representatives

Calif., Los Angeles—Smith-Booth-Usher Co., 2001 Santa Fe
Calif., San Francisco—Edw. R. Bacon Co., 17th & Folsom
Colo., Denver—Universal Co., 1426 Ulster
Ore., Portland—Loggers & Contractors Machinery Co., 240 S.E. Clay
Wash., Seattle—Northwest Scaffolding Co., 3636 E. Marginal Way

SAUERMAN BROS., INC., 620 So. 28th Ave., Bellwood, Ill.

Conveyors (drag), Hoists (air, drum, electric, gasoline), Wire rope.

Representatives

Calif., Los Angeles—Smith-Booth-Usher, 2001 Santa Fe Ave. TR 6911
Colo., Denver—Constructors Equipment Co., 3707 Downing St. AL 5-3474
Mont., Butte—Hall-Perry Machinery Co., 812 E. Iron. 2-2323
Ore., Portland—Clyde Equipment Co., 1631 N.W. Thurman. BR 5561
Wash., Seattle—Clyde Equipment Co., 3410 First Ave. So. MA 1235
Wash., Spokane — Intermountain Equipment Co., 611 Sprague St. TE 2521

SCHIELD BANTAM CO., Park St., Waverly, Iowa

Cranes (yard, truck, tractor, wagon).

Branch

Wash., Spokane—2316 Mantio Blvd.

Representatives

Ariz., Phoenix—Neil B. McGinnis Equipment Co., P.O. Box 3617
Calif., Fresno—Moore Equipment Co., Box 1204
Calif., Los Angeles—Cook Bros. Equipment Co., 3334 San Fernando Rd.
Calif., No. Sacramento—Moore Equipment Co., 903 Del Paso Blvd.
Calif., Oakland—Bay Cities Equipment Co., 2792 Cypress St.
Calif., Redding—Moore Equipment Co., So. 99 Hwy.
Calif., San Diego—Shaw Sales & Service Co., 2175 Newton Ave.
Calif., Stockton—Moore Equipment Co., P.O. Box 1971
Colo., Denver—McKelvy Machinery Co., 2375 15th St.
Idaho, Boise—Engineering Sales & Service, P.O. Box 851
Mont., Great Falls—Normont Equipment Co., 420 Third St. So.
Mont., Kalispell—Treasure State Equipment Co., Fifth and Railroad N.W.
Mont., Missoula—Treasure State Equipment Co., 400 Knowles St.
Nev., Elko—A-D Machinery Co., 251 W. Commercial St.
Nev., Reno—Moore Equipment Co., 1550 W. Fourth St.
N. Mex., Albuquerque—Harry Cornelius Co., 1510 Second St. N.W.
N. Mex., Roswell—Smith Machinery Co., P.O. Box 984
Ore., Medford—Cal-Ore Machinery Co., 944 So. Central Ave.
Ore., Portland—Wood Tractor Co., 1033 S.E. Main St.
Utah, Salt Lake—Kimball Equipment Co., 222 W. 17th So.
Wash., Seattle—Modern Machinery Co., 4975 Third Ave. So.
Wash., Spokane—Modern Machinery Co., P.O. Box 2152
Wyo., Casper—Studer Tractor & Equipment Co., E. Yellowstone Hwy.

SCHMIDT LITHOGRAPH CO., 461 Second St., San Francisco, Calif.

Corrugated and fibre shipping boxes.

Branches

Calif., Fresno—216 Security Bank Bldg. FR 3-4536
Calif., Los Angeles—2405 W. Eighth St. DU 8-6101
Calif., Sacramento—1601 J St. HU 4-2709
Ore., Portland—320 Hughes Bldg. AT 1458
Wash., Seattle—800 Terminal Sales Bldg. EL 7462

SCREW CONVEYOR CORP., 700 Hoffman St., Hammond, Ind.

Conveyors (continuous flow, screw), Elevators (bucket, screw lift), Dumpers (hydraulic), Trucks (hand-electric lift, hydraulic lift, power-driven lift), Elevator buckets, Electric and hydraulic truck lifts, Hydraulic truck dumpers.

Branch

Calif., Santa Clara—2775 Park Ave. AX 6-7450

Representatives

Ariz., Phoenix—Redman Equipment Co., 610 So. 19th. AL 8-3794
Ore., Portland—Reid - Strutt, Inc., 1015 S.E. Stark. FI 4367
Wash., Seattle—Adelman Machinery Co., 520 First Ave. So.
Wash., Spokane—Carter-Miller Co., 1324 No. Ash

SELMA TRAILER & MFG. CO., 3111 Highway 99, Selma, Calif.

Trailer axles, Carts (hand, push, other), Factory and warehouse trailers.

SHEPARD NILES CRANE & HOIST CORP., Schuyler Ave., Montour Falls, N. Y.

Cranes (gantry, hand power, jib, pillar, swing, double beam overhead, electric overhead, foundry overhead, hand power overhead, I beam overhead, locomotive overhead, monorail overhead), Hoists (crane, derrick, electric, monorail, skip, traveling, other), Winches and Windlasses.

Branches

Calif., Bell—6515 Salt Lake Ave. LO 5-6255
Calif., Emeryville—3637 Adeline St. PI 5-5412

Representatives

Utah, Salt Lake—Modern Equipment Co., 52 W. Second South St. 9-2171
Wash., Seattle—Preston Faller, 1921 Minor Ave. MA 4256
B. C., Vancouver—J. H. Ryder Machinery Co., 2246 E. Hastings

SHERMAN PAPER PRODUCTS CORP. OF CALIF., 2001 No. Soto, Los Angeles 32, Calif.

Boxes (corrugated and fibre, other).

Branches

Calif., Sacramento—1404 Greenhills Rd. IV 7-7339
Calif., San Francisco—1485 Bayshore. DE 3-3671
Colo., Denver—416 So. Ogden Ct. PE 6671
Ore., Portland—3938 S.E. 105th St.
Wash., Seattle—524 First Ave. So. MA 6838

SIGNODE STEEL STRAPPING CO., 2600 No. Western Ave., Chicago 47, Ill.

Pallets, Strapping.

See advertisement on page 66

Branches

Ariz., Phoenix—210 W. Adams St. AL 8-5691
Calif., Los Angeles—659 E. Gage Ave. AD 3-6185
Calif., San Francisco—383 Brannan St. DO 2-7222
Ore., Portland—1519 N.W. Irving St. CA 3-5327
Utah, Salt Lake—212 Beason Bldg. 4-8353
Wash., Seattle—2900 E. Marginal Way. MU 2343
Wash., Spokane—417 Paulsen Bldg. MA 6211

SILENT HOIST & CRANE CO., 841 63rd St., Brooklyn 20, N. Y.

Car pullers, Cranes (yard, truck, tractor), Hoists (crane, drum, electric, gasoline, hydraulic, portable), Trucks (gasoline industrial, gasoline lift), Winches and Windlasses.

Representatives

Calif., San Francisco—Hamerslag Equipment Co., 45 Elmira St. JU 7-1357
Calif., South Gate—Cost Reduction Equipment Co., 5200 Chakemco St. LO 7-2487
Colo., Denver—John N. Meade, U. S. National Bank Bldg.
Idaho, Boise—Intermountain Equipment Co., P. O. Box 1129. Phone 3-6441
Mont., Missoula—Westmont Tractor & Equipment Co.
N. Mex., Albuquerque—R. L. Harrison Co., P. O. Box 1320 Phone 7-8811

SKAGIT STEEL & IRON WORKS, Sedro-Woolley, Wash. 8-5311

Hoists (derrick, drum, electric, gasoline, hand, skip, marine, industrial, logging), Winches and Windlasses.

Representatives

Ariz., Phoenix—State Tractor & Equipment Co., 150 E. Spruce St.
Calif., Chico—Sierra Tractor & Equipment Co., 1240 Park Ave.
Calif., Eureka—Brizard-Matthews Machinery Co., P.O. Box 77
Calif., Los Angeles—Smith-Booth-Usher Co., 2001 Santa Fe Ave.
Calif., Napa—Berglund Tractor & Equipment Co., 1016 Soscol Ave.
Calif., San Francisco—Edward R. Bacon Co. Hawaii, Ltd., 582 Market St.
Calif., San Francisco—Edward R. Bacon Co., Folsom at 17th St.
Calif., Oxnard—Wallace Machinery Co., 625 No. Oxnard
Colo., Denver—Western Machinery Co., 2400 W. Seventh Ave.
Colo., Grand Junction—S & M Supply Co., 735 Fourth Ave.
Idaho, Boise—Engineering Sales Service, Inc., 410 Capitol Blvd.
Mont., Billings—Seitz Machinery Co., 420 No. 24th St.
Mont., Missoula—Westmont Tractor & Equipment Co., 150 E. Spruce St.
Nev., Reno—Sierra Machinery Co., 307 Morrill Ave.
N. Mex., Albuquerque—R. L. Harrison Co., 1801 No. Fourth St.
Ore., Klamath Falls—Cascade Industrial Supply, Inc., 515 Market St.
Ore., La Grande—Inland Machinery Co., 212 Greenwood St.
Ore., Pendleton—Empire Machinery Co., 1849 S.W. Court Ave.
Ore., Portland—Interstate Tractor & Equipment Co., 2855 N.W. Front Ave.
Utah, Salt Lake—Taylor Machinery Co., 2800 Beck St.
Wash., Seattle—Star Machinery Co., 241 Lander St.
Wash., Seattle—Washington Machinery Co., 7329 E. Marginal Way
Wash., Seattle—Collins Machinery Co., 2 Hanford St.
Wash., Spokane—Inland Diesel & Machinery Co., E. Seventh and Third Ave.
Wash., Wenatchee—Columbia Tractor Co., 239 No. Wenatchee Ave.
Wyo., Cheyenne—Wortham Machinery Co., 517 W. 17th St.

SPANMASTER CRANE DIV., JERVIS B. WEBB CO. OF CALIF., 9301 Rayo Ave., South Gate, Calif.

Cranes (gantry, hand power, jib, pillar, swing, bracket, double beam overhead, electric and electric traveling overhead, foundry overhead, hand power overhead, I beam overhead, monorail overhead), Hoists (monorail), Trolleys.

Branches

Ariz., Phoenix—902 So. Central Ave. AL 2-7217
Calif., San Francisco—2166 Market St. KL 2-2709
Utah, Salt Lake—52 W. Second South St. 9-2171
Wash., Seattle—4305 Emerson St. AL 8770

SPAULDING FIBRE CO., 310 Wheeler St., Tonawanda, N. Y.

Barrels for shipping (fibre), Baskets (fibre), Boxes, tote, Casters, Trucks (factory and warehouse, sheet handling).

Representative

Calif., Berkeley—C. D. LaMoree, 2221 Fourth St. TH 1-0601
Calif., Los Angeles—C. D. LaMoree, 1325 San Julian St. RI 8-7341

SPEAR MFG. CO., 1209 E. Nadeau St., Los Angeles, Calif.

Baskets (fibre, metal, wire, other), Coil feeds (automatic, manual), Parts hoppers.

Representative

Wash., Seattle—Sumner & Traub, 1500 Westlake No. GA 0300

SPEEDWAYS CONVEYORS, INC., 202 Rhode Island St., Buffalo, N. Y.

Conveyors (gravity roller, live roller, skate, special and other), Wheels (conveyor).

Representatives

Calif., Los Angeles—Robco, Inc., 5348 Jillson St. AN 5126
Calif., San Francisco—Hamerslag Equipment Co., 45 Elmira St. JU 7-1357
Wash., Tacoma—Equipment Supplies, Inc., 2301 So. Tacoma Way. HI 9547

STANDARD CONVEYOR CO., No. St. Paul 9, Minn.

Conveyors (apron, automatic, bag and bale, chain or link, continuous flow, flight).

See advertisement on page 165

Branches

Calif., Los Angeles—115 E. 23rd St. RI 1150
Calif., San Francisco—840 Harrison St. EX 2-1560
Colo., Denver—1745 Blake St. KE 4-5500
Ore., Oswego—2574 Glen Eagles Pl.
Utah, Salt Lake—204 Dooley Bldg. 4-6421
Wash., Seattle—502 First Ave. So. SE 0707

STANLEY STEEL STRAPPING DIV., THE STANLEY WORKS, 1068 So. Lake St., New Britain, Conn.

Steel Strapping

See advertisement on page 155

Branches

Calif., Los Angeles—108 W. Sixth St. TR 6795
Calif., San Francisco—681 Market St. (Monadnock Bldg.) YU 6-5914
Wash., Seattle—105 Second St. No. MA 5773

STAR IRON & STEEL CO., 435 E. 11th St., Tacoma, Wash. MA 9133

Cranes (gantry, hand power, double beam overhead, electric and electric traveling overhead, hand power overhead, I beam overhead), Grapples (lumber).

STEARNS MAGNETIC, INC., 655 So. 38th St., Milwaukee 46, Wisc.

Magnets, Pulleys (magnetic).

Representatives

Ariz., Phoenix—L. F. Hoag, 35 E. Pierson St.
Calif., Los Angeles—Willard Engineering Co., 2708 So. Hill St. RI 7-0538
Calif., San Francisco—Transmission Engineering Co., 53 Stevenson St. SU 1-4738
Colo., Denver—Schloss & Shubart, 1626 Wazee St. AC 2741
Ore., Portland—J. J. Ross Mill Furnishing Co., 708 N.E. Second Ave. EA 2197
Utah, Salt Lake—National Equipment Co., 101 W. Second South St. 3-8878
Wash., Seattle—John H. Marvin Co., 1014 First St. EL 6361

STEPHENS-ADAMSON MFG. CO., Ridgeway Ave., Aurora, Ill.

Conveyors (apron, automatic, bag and bale, belt, bucket, chain or link, continuous flow, drag, flight, foundry, screw, slat, vibrating, zipper), Elevators (bucket, continuous flow), Hoists (drum, electric, hand, skip), Winches and Windlasses.

See advertisement on back cover

Branches

Calif., Los Angeles—2227 E. 37th St. LO 8-1511
Calif., San Francisco—151 Mission St. GA 1-8666
Colo., Denver—609 Equitable Bldg. AL 0533
Ore., Portland—1007 E. Burnside St. VE 4473
Utah, Salt Lake—210 W. 33rd So. 6-8683
Wash., Seattle—714 Jos. Vance Bldg. MU 3963

Representative

Ore., Portland—Harschberger Equipment Co., 425 S.E. Ninth

SYNTRON CO., 875 Lexington Ave., Homer City, Pa.

Conveyors (vibrating), Vibrators (bin, hoppers, chute).

Branches

Ariz., Tucson—R. W. Bartley, 2144 No. Campbell Ave. 5-2291
Calif., San Francisco—59 30th St. AT 8-1162
Calif., South Gate—8413 State St. LO 7-1457
Colo., Denver—Krippner & Polley, 1166 Elati St. AL 1059
Ore., Portland—F. W. R. Preer, 2310 N.E. Stanton St. GA 9215
Utah, Salt Lake—353 W Fourth South St 9-7363
Wash., Seattle—15223 Eighth Ave. So. CH 6250

TAYLOR MFG. CO., 10192 Ball Rd., Anaheim, Calif. KE 5-6021

Carts (hand, push, electric), Trucks (industrial electric, personnel).

See advertisement on page 3

Representatives

Calif., Altadena—Meadows Bros., 3184 No. Lake. SY 7-1171
Calif., San Diego—A. H. Kalish, 3676 Fairmount. TA 5616
Calif., San Francisco—Elder & Co., 390 Seventh St. UN 1-5480
Ore., Portland—Oregon Handling Equipment Co., 2949 N. W. St. Helens Rd. AT 4196
Texas, El Paso—E. D. F. Lovejoy Co., 122 E. Missouri. 3-5531
Wash., Seattle—Cascade Handling Equipment Co., 410 Battery St. MA 7069

TEMPLETON, KENLY & CO., Gardner Rd., Broadview, Ill.

Jacks (hydraulic, lift, screw, other).

Branch

Calif., Concord—1050 Bancroft Rd.

Representatives

Ariz., Phoenix—Pratt-Gilbert Hardware Co., 701 So. Seventh St.
Calif., Los Angeles—Fornaciari Co., 5350 E. Washington Blvd.
Colo., Denver—Mine & Smelter Supply Co., 17th and Blake Sts.
Idaho, Boise—Intermountain Equipment Co., Broadway and Myrtle Sts.
Mont., Great Falls—Carl Weissman & Sons, Inc., 300 Third Ave.
N. Mex., Carlsbad—Union Industrial Corp.
Nev., Reno—Sierra Machinery Co., 307 Morrill Ave.
Ore., Portland—J. E. Haseltine & Co., Second Ave. and Ash St.
Utah, Salt Lake—Mine & Smelter Supply Co., 121 W. Second South St.
Wash., Seattle—Seattle Hardware Co., 501 First Ave.
Wyo., Casper—Great Northern Tool & Supply Co.

THERMOID CO., Trenton, N. J.

Belting (conveyor, elevator, endless), Slings (belt), Hose.

Branches

Calif., Los Angeles—2481 Porter St. TR 8603
Calif., San Francisco—544 Second St. YU 2-4141
Colo., Denver—166 11th St. CH 4-0355
Ore., Portland—3939 N.W. St. Helens Rd. CA 9765
Utah, Nephi—Thermoid Western. Phone 424W

THEW SHOVEL CO., E. 28th St. & Fulton Rd., Lorain, Ohio

Cranes (yard, truck, tractor), Loaders (portable, self-propelled), Shovels, Scoop shovels, Clamshells, Draglines.

Branches

Calif., San Francisco—1660 Russ Bldg. YU 6-1928
Ore., Portland—5217 N. E. 35th Pl. GA 7255

Representatives

Ariz., Phoenix—Lee Redman Equipment Co., 610 So. 19th Ave.
Calif., Los Angeles—Santa Fe Equipment Co., 3090 Santa Fe Ave.
Calif., San Bernardino—Santa Fe Equipment Co., 867 Colton Ave.
Calif., San Francisco—Coast Equipment Co., 444 Eighth St.
Colo., Alamosa—McCoy Co., P. O. Box 570
Colo., Denver—McCoy Co., 6000 Colorado Blvd.
Colo., Grand Junction—McCoy Co., P.O. Box 158
Colo., Sterling—McCoy Co., P. O. Box 871
Idaho, Boise—Southern Idaho Equipment Co., 1301 Capitol Blvd.
Idaho, Twin Falls—Southern Idaho Equipment Co., 129 Washington St. W.
Mont., Billings—Nash-Davis Machinery Co., 509 No. 27th St.
Mont., Bozeman—Nash-Davis Machinery Co., 109 No. Rouse St.
Mont., Glasgow—Tractor & Equipment Co., P. O. 547
Mont., Great Falls—Central Machinery Co., 721 Second St. So.
Mont., Havre—Central Machinery Co., P. O. Box 1231
Mont., Kalispell—Mountain Tractor Co., Third Ave. E & Railroad
Mont., Lewistown—Central Machinery Co., Municipal Airport
Mont., Miles City—Tractor & Equipment Co., P. O. Box 60
Mont., Sidney—Tractor & Equipment Co., 201 No. Central
Nev., Reno—General Equipment Co., 1201 E. Second Ave.
Ore., Portland—P. L. Crooks & Co., 2145 N.W. Pettygrove St.
Utah, Salt Lake—H. H. Nielson Co., 216 Paxton Ave.
Wash., Seattle—A. H. Cox & Co., 1757 First Ave. So.
Wash., Spokane—Andrews Equipment Service, 126 So. Walnut St.
Wash., Tacoma—A. H. Cox & Co., 2015 Center St.
Wyo., Casper—Wortham Machinery Co.
Wyo., Cheyenne—Wortham Machinery Co., 51. W. 17th St.
Wyo., Greybull—Nash-Davis Machinery Co., Sixth & Eighth Sts.
Wyo., Sheridan—Wortham Machinery Co.
Wyo., Rock Springs—Wortham Machinery Co.

THISTLE ROLLER & MFG. CO., 5107 Telegraph Rd., Los Angeles, Calif. AN 2-2108

Rollers (conveyor, other), Rubber bonding, Wheels (general industrial).

THOR POWER TOOL CO., 175 N. State St., Aurora, Ill.

Hoists (air).

Branches

Calif., Los Angeles—6200 Slauson Ave. RA 3-3191
Calif., San Francisco—315 S. Van Ness Ave. UN 1-2045
Colo., Denver—1040 Spear Blvd. AL 3668
Wash., Seattle—611 E. Pike St. CA 5000

TOLEDO SCALE CO., 1105 Telegraph Road, Toledo 1, Ohio

Scales (automatic, conveyor, counting, monorail, packaging, portable, warehouse, motor truck).

Branches

Calif., Los Angeles—1115 So. Hope St.
Calif., Oakland—2600 West St.
Calif., San Francisco—968 Mission St.
Ore., Portland—1405 S.W. Fourteenth Ave.
Wash., Seattle—415 Bell St.
Wash., Tacoma—704 Pacific Ave.

Representatives

Ariz., Phoenix—H. E. Eash, 2432 W. Buckeye Rd.
Ariz., Tucson—J. W. Hughes, 1134 So. Park Ave.
Calif., Fresno—L. I. Baker, 917 N St.
Calif., Sacramento—Albert O. Fiske, 3413 Broadway
Calif., San Diego—Robert R. Perry, 710 Market St.
Calif., San Jose—C. L. Cook, 333 Prevose St.
Calif., Santa Rosa—A. N. Nicholson, 305 Sebastopol Ave.
Calif., Stockton—John L. Sullivan, 1535 E. Miner Ave.
Colo., Denver—D. D. Craw, 1942 Arapahoe St.
Idaho, Boise—D. M. Dove, 3011 State St.
Idaho, Pocatello—H. D. Lenkersdorfer, 841 So. Fourth St.
Mont., Billings—H. Beckerini, 1104 N. 26th St.
Mont., Butte—R. A. Morgan, 219 E. Park St.
Mont., Great Falls—M. C. Anderson, 3415 Second Ave. No.
Nev., Reno—Ray Seher, 344 Sierra St.
N. Mex., Albuquerque—O. C. Bare, 315 Broadway N.E.
Utah, Salt Lake—R. J. Davis, 155 E. First South St.
Wash., Spokane—D. C. Anderson, 211 W. Trent St.
Wash., Yakima—L. D. Riley, 105 So. First St.

TON-TEX CORP., 247 Pearl St., N. W., Grand Rapids 2, Mich.

Belting (conveyor, fabric, canvas, endless), Belt fasteners, Belt lacing.

Branch

Calif., San Jose—759 W. San Carlos. CY 3-3230

TOTE SYSTEM, INC., 700 So. Seventh St., Beatrice, Neb.

Bins, Boxes for shipping, Tote boxes.

Representatives

Calif., Burlingame—Howard Burt & Sons, 1054 Broadway. DI 2-2058
Calif., Pasadena—Empire Engineering Co., 385 E. Green St. RY 1-6178

TOWMOTOR CORP., 1226 E. 152nd St., Cleveland 10, Ohio

Yard cranes, Tractors (diesel, gasoline warehouse), Trucks (bag, barrel, drum, box type, die handling, elevating and lifting, factory and warehouse, diesel fork, gasoline fork, hand motorized, gasoline lift, hand-electric lift, pallet, sheet handling, skid handling, other)

See advertisement on page 56

Branch

Calif., Oakland—699 Fourth St. TW 3-3668

Representatives

Calif., Fresno—Valley Forklift Rental & Equipment Co., 2424 So. Railroad. 8-2074
Calif., Los Angeles—Irving G. King & Co., 821 Mateo St. TU 3176
Colo., Denver—Case Material Handling, 3301 Walnut. AL 5-3984
N. Mex., Albuquerque—E. D. Flournoy Co., 217 Sixth St. S. W. 3-1055
Ore., Portland—Air-Mac, Inc., 1435 S. E. Union. FI 6524
Utah, Ogden—The Horsley Co., 2416 Grant Ave. 2-1847
Wash., Seattle—Air-Mac, Inc., 3838 Fourth Ave. So. MU 3388

TRACTOMOTIVE CORP., County Line Rd., Deerfield, Ill.

Loaders (portable, self propelled), Tractors (diesel, gasoline warehouse).

Representatives

Ariz., Phoenix—Neil B. McGinnis Equipment Co., 500 So. Central Ave. AL 8-5391
Calif., Bakersfield—San Joaquin Tractor Co., Calif. Ave. and Hwy. 99. FA 4-4517
Calif., Eureka—Aikins Tractor Co., 2016 Broadway. HI 2-2986
Calif., Los Angeles—Shaw Sales & Service Co., 5100 Telegraph Rd. FR 9-4145
Calif., Oakland—Buran Equipment Co., 777 100th Ave. TR 2-5335
Calif., Stockton—Moore Equipment Co., Cherokee Lane and Hwy. 99. Phone 4-7641
Idaho, Idaho Falls—Southern Idaho Equipment Co., No. Yellowstone Hwy. 2810
Mont., Billings—Seitz Machinery Co., 420 No. 24th St. 2-2103
Mont., Missoula—Montana Tractor Co., 1345 W. Broadway. 6-6651
Mont., Sidney—Richland Machinery Co., 402 E. Morrill St. Phone 518
Nev., Elko—A-D Machinery Co., 251 W. Commercial. Phone 92
Ore., Eugene—Pape Bros., 1060 W. First Ave. 5-0531
Ore., Medford—Haupert Tractor Co., 3610 No. Pacific Hwy. 2-5279
Ore., Portland—Wood Tractor Co., 1033 S.E. Main St. VE 3135
Utah, Salt Lake—Cate Equipment Co., 49 E. Ninth South St. 9-2021
Wash., Seattle—A. H. Cox & Co., 1757 First Ave. So. MA 1121
Wash., Spokane—American Machine Co., 1026 W. Broadway. FA 2591
Wash., Wenatchee—Mid-State Equipment Co., 313 No. Mission St. NO 2-7151
Wyo., Casper—Studer Tractor & Equipment Co., P.O. Box 779. 2-5381

TRAILMOBILE, INC., 31st and Robertson Ave., Cincinnati 9, Ohio

Trailers.

Branches

Calif., Berkeley—901 Gilman St. LA 5-0570
Calif., Fresno—2626 Railroad Ave. FR 3-6205
Calif., Los Angeles—1765 E. 46th St. AD 1-9283
Calif., Oakland—640 Hegenberger Rd. LO 2-5554
Calif., Sacramento—510 No. 12th St. GI 2-6938
Calif., San Francisco—2030 Third St. UN 3-5324
Utah, Salt Lake—365 W., 1370 South. 84-7616

Representatives

N. Mex., Albuquerque—M & F Equipment Co., 824 Arno St. N.E. 3-3793
Ore., Portland—Riddell Trailer & Equipment Co., 2305 N.W. 30th Ave. AT 2173
Wash., Seattle—Riddell Trailer & Equipment Co., 2024 Airport Way. MU 0946
Wash., Spokane—Critzer Equipment Co., E. 3804 Front St. KE 3890

TRANSITIER TRUCK CO., 5475 No. Lagoon Ave., Swan Island, Portland 11, Ore. UK 4519

Trucks (gasoline fork).

See advertisement on inside front cover

Representatives

Calif., Los Angeles—W. T. Billard, Inc., 734 E. Third St. MI 2659
Calif., San Francisco—Roll-Rite Corp., 801 Jefferson St. GL 1-5921
Ore., Portland—Hallidie Machinery Co., 1545 S.E. Union. FI 7491
Wash., Seattle—Hallidie Machinery Co., 210 Hudson St. LA 9520

TUBE-STRUT DIV., TUBULAR STRUCTURES CORP. OF AMERICA, 3129 Riverside Dr., Los Angeles, Calif.

Racks (pallet, storage, other), Pipe clamps.

See advertisement on page 146

Representatives

Calif., Los Angeles—Green-Penny Co., 421 E. Washington Blvd.
Calif., Los Angeles—Material Equipment Supply Co., 1358 So. Grand Ave.
Calif., Oakland—Green-Penny Co., 2211 San Pablo Ave.
Calif., San Francisco—Hamersley Equipment Co., 45 Elmira St.
Wash., Seattle—Hallidie Machinery Co., 210 Hudson St.

TUBULAR STRUCTURES CORP. OF AMERICA, 2960 Marsh St., Los Angeles, Calif.

Elevators (portable tiering), Hoists (portable).

Representatives

Ariz., Phoenix—Waco Scaffolding & Equip., 3023 W. Van Buren
Calif., Los Angeles—Waco May Co., 3129 Riverside Dr.
Calif., San Diego—Southern Equipment Co., 2050 E. Harvard Dr.
Calif., San Francisco—Lawrence Meyers Co., 666 Mission St.
Calif., Stockton—Waco Scaffolding Co., 2092 So. Alvarado
N. Mex., Albuquerque—New Mexico Equipment Co., 2222 So. Broadway
Utah, Salt Lake—Waco Scaffolding & Equip., 939 So. Seventh West St.
Wash., Spokane—Construction Equipment Co., E. 3823 Trent Ave.

TULSA WINCH DIV., VICKERS, INC., 815 E. First St., Tulsa 20, Okla.

Winches and Windlasses.

Representatives

Ariz., Phoenix—Welch Mfg. Co., 533 W. Jefferson. AL 8-0276
Calif., Los Angeles—Standard Auto Body Co., 4900 So. Soto St. LO 8-1471
Calif., Lynwood—Rankin Brothers, 11090 So. Alameda. NE 6-1929
Calif., Sacramento—W. V. Morgan Co., 301 Broadway. GI 3-1709
Calif., San Francisco—Modern Vehicle Co., 2044 Bryant St. AT 2-7414
Colo., Denver—The Winter Weiss Co., 2201 Blake St. MA 6233
Idaho, Boise—The Lang Co., 420 No. Curtis Rd. 8311-W
Mont., Great Falls—Smith Equipment Co., 820 Ninth St. No. 2-1713
N. Mex., Albuquerque—M & F Equipment Co., 824 Arno N.E. 3-3793
N. Mex., Hobbs—Watson Truck & Supply, P. O. Box 1238. Phone 3-3161
Ore., Eugene—Western Equipment Co., 1360 W. First St. EU 4-4265
Ore., Portland—Western Equipment Co., 2241 N.W. Savier St. AT 4128
Utah, Salt Lake—The Lang Co., 267 W. First St. 3-5831
Wash., Seattle—Utility Trailer & Equipment Co., 3400 Sixth Ave. So. MU 2226
Wash., Spokane—Andrews Equipment Service, 126 So. Walnut. MA 3156
Wyo., Casper—Gehring Equipment Co., 1701 E. Yellowstone.

TUTHILL PUMP CO., 939 E. 95th St., Chicago 19, Ill.

Pumps (rotary).

See advertisement on page 60

Representatives

Calif., San Francisco—Westco Pump Sales Co., 85 Industrial St.
Calif., Los Angeles—Wagner Hydraulic Equip ment Co., 10633 Wellworth Ave.

UNION STEEL PRODUCTS CO., Berrien St., Albion, Mich.

Baskets (metal, wire), Boxes for shipping (wire), Conveyors (chain or link), Pallets (wire).

Representatives

Ariz., Phoenix—R. H. Braun Co., 2308 S. 11th Ave. AL 8-8951
Calif., Bakersfield—R. H. Braun Co., 1910 19th St.
Calif., Fresno—R. H. Braun Co., P.O. Box 1066. Phone 6-0169
Calif., Los Angeles—R. H. Braun Co., 5519 Jillson St. RA 3-6381
Calif., San Diego—R. H. Braun Co., 2208 Imperial Ave. BE 3-0948
Calif., San Francisco—Western Ind. Equipment Co., 420 Market St. SU 1-4757
Ore., Eugene—Air-Mac, Inc., 375 E. Fifth St.
Ore., Portland—Air-Mac, Inc., 1435 S.E. Union Ave. FI 6524
Utah, Salt Lake—Equipment Supply Co., 16 Post Office Pl. 3-9074
Wash., Seattle—Air-Mac, Inc., 3838 Fourth Ave. So. MU 3388
Wash., Spokane—Air-Mac, Inc., E. 3710 Trent Ave. KE 0561
Wash., Yakima—Air-Mac, Inc., 313 No. Grandview. YA 2-1552

UNION WIRE ROPE CORP., 21st and Manchester Ave., Kansas City 26

Slings (wire rope), Wire Rope.

Branch

Calif., Sacramento—903 Del Paso Blvd. WA 5-5124

UNISTRUT PRODUCTS CO., 1013 Washington Blvd., Chicago 7, Ill.

Racks (pallet, storage, other).

Branch

Calif., Beverly Hills—P.O. Box 3291, Olympic Station. BR 2-6203

Representatives

Ariz., Phoenix—Western Specialty Co., 18 E. Lincoln St. AL 4-1866
Calif., Berkeley—Unistrut Sales of No. Calif., 100 Ashby Ave. TH 3-4964
Calif., Pasadena—Glenmart Co., 990 So. Fair Oaks Ave. PY 1-1004
Calif., Sacramento—A. W. Herron Co., 215 12th St. GI 3-4621
Colo., Denver—Landes, Zachary & Peterson, 2500 W. Seventh Ave. MA 6203
Mont., Helena—Builders Supply Co., P.O. Box 186. Phone 469
Utah, Salt Lake—Pace-Turpin & Co., 726 So. Third West St. 22-5595
Wash., Seattle—The Brower Co., 114 Virginia St. MU 0464
Wyo., Casper—Landes, Zachary & Peterson, 246 So. Nebraska St. 3-3610

UNIT CRANE & SHOVEL CORP., 6411 W. Burnham St., Milwaukee 14, Wisc.

Cranes (truck).

Representatives

Ariz., Phoenix—O. S. Stapley Co., 732 W. Van Buren. AL 3-2121
Calif., Los Angeles—Brown-Bevis Industrial Equipment Co., 6550 E. Washington Blvd. RA 3-6321
Calif., Oakland—Bay Cities Equipment, Inc., 2792 Cypress St. TW 3-8313
Calif., Stockton—Moore Equipment Co., No. Hwy. 99. HO 4-7641
Colo., Denver—Air Rentals, Inc., 3301 Walnut St. AC 2-1721
Mont., Billings—Seitz Machinery Co., 420 No. 24th St. 2-2103
Ore., Portland—Manitou Equipment Co., 3251 N.W. Front St. BR 3418
Utah, Salt Lake—Rasmussen Equipment & Supply, 1960 So. Second West St. 8-5478
Wash., Seattle—C. H. Bell Equipment Co., 550 Mercer St. AL 2328
Wash., Spokane—Inland Diesel & Machinery Co., E. 7 Third Ave. TE 1441

Articles to show you how materials handling can save you money appear the year around in Western Industry

UNITED MFG. CO., 3637 W. 56th St., Cleveland, Ohio

Axles (truck, trailer, other), Casters, Trailers (factory and warehouse), Trucks (dolly, factory and warehouse, other), Wheels (general industrial, hand truck, rubber tired, tractor, trailer).

Representative

Calif., Los Angeles—Robco, Inc., 5348 Jillson St. AN 8-5126

UNITED STATES RUBBER CO., 1230 Avenue of the Americas, New York, N. Y.

Barrels (rubber, collapsible), Belting (conveyor, fabric, canvas, elevator, endless), Conveyors (belt), Elevators (belt), Tires (industrial truck and tractor).

See advertisement on page 18

UNITED STATES STEEL CORP. see **COLUMBIA-GENEVA STEEL DIV.** see **CYCLONE FENCE DEPT., AMERICAN STEEL & WIRE DIV.,** see **GERRARD STEEL STRAPPING DIV.**

UNIT MFG. CO., 69 So. 13th St., Minneapolis 3, Minn.

Cranes (hand power), Hoists (electric, hydraulic, portable), Trucks (die handling, hand lift, hydraulic lift, pallet).

Representatives

Ariz., Phoenix—Kingsland Sales Corp., 515 So. First St.
Calif., Los Angeles—Marshall Tool & Supply Corp., 2850 E. Olympic Blvd.
Calif., San Diego—Clifford A. Hanson, 4471 Dawson Ave.
Calif., San Francisco—Heil Equipment Co., 999 16th St.
Idaho, Idaho Falls—Simpson's, Inc., P.O. Box 340

UNIVERSAL CRANEHOIST & MONORAIL CO., 634 Sixth St., San Francisco, Calif. MA 1-8841

Chains, Cranes (gantry, hand power, jib, pillar, swing, bracket, double beam overhead, electric and electric traveling overhead, foundry overhead, hand power traveling overhead, I beam overhead, locomotive overhead, monorail overhead), Grabs, Grapples, Hoists (air, bucket, chain, crane, drum, electric, hand, monorail, portable, traveling), Magnets, Slings (chain, wire rope), Trolleys, Winches and Windlasses.

UNIVERSAL HOIST & MFG. CO., 1326 Western Ave., Cedar Falls, Iowa

Conveyors (belt, bucket, drag, vertical), Elevators (belt, bucket), Hoists (drum, electric, gasoline), Winches and Windlasses.

Representatives

Ariz., Phoenix—Redman Lee Equipment Co., 610 So. 19th St.
Calif., Los Angeles—L. N. Webster & Co., 4221½ Avocado St.
Calif., Riverside—Hudson Sales Co., 4905 Arlington Ave.
Calif., San Francisco—Walter N. Steele Co., 41 Drumm St.
Calif., San Gabriel—Walter N. Steele Co., 6737 No. Vista St.
Idaho, Twin Falls—Walter N. Steele Co., 401 So. Shoshone St.
N. Mex., Roswell—Carl J. Carlson, 1105 So. Kentucky St.
Wash., Spokane—Carter-Miller Mill Furnishing Co., 1324 No. Ash St.

UPSON-WALTON CO., 12510 Elmwood St., Cleveland, Ohio

Wire rope swaged assemblies, Crane hook blocks, Tackle blocks, Slings (rope, wire rope), Wire rope, Wire rope fittings.

Representatives

Calif., Los Angeles—E. R. Palmtag Co., 164 So. Central Ave.
Calif., San Francisco—E. R. Palmtag Co., 975 Indiana St. AT 2-2600
Ore., Portland—G. G. Gillette, 309 S. W. Third St. BE 2730
Ore., Portland—Lou Falkenhagen Co., 907 N. W. Irving St. BE 3074
Wash., Seattle—G. L. McLaren—816 Arctic Bldg. EL 4051

VICKERS, INC., see **TULSA WINCH DIV.**

VICTOR BALATA & TEXTILE BELTING CO., 53 Park Pl., New York 7, N. Y.

Belting (balata, canvas stitched, hycar, neoprene, solid woven cotton).

Representatives

Calif., Los Angeles—Degen Fiege Co., 1733 E. 15th St. RI 8-2281
Calif., San Francisco—Pacific Coast Rubber Co., 51 Main St. EX 2-6963
Calif., So. Pasadena—T. H. Hinchcliffe, P. O. Box 221 CL 6-1348
Ore., Portland—S. Alex Turnley, 4433 N. E. Failing St. GA 2176
Utah, Salt Lake—Mountain States Rubber Co., 121 Social Hall Ave. 3-6727
Wash., Everett—Washington Belting & Rubber Co., 2923 Grand Ave. CE 3111
Wash., Seattle—Washington Belting & Rubber Co., 2763 First Ave. So. EL 5650
Wash., Spokane—Nott-Atwater Co., So. 157 Monroe St. MA 4377
Wash., Tacoma—Washington Belting & Rubber Co., 672 E. 11th St. MA 8158

VIKING PUMP CO., Fourth and Koch Sts., Cedar Falls, Iowa

Pumps.

See advertisement on page 160

Branch

Calif., Los Angeles—4432 Long Beach Ave. AD 3-8165

Representatives

Calif., San Francisco—DeLaval Pacific Co., 61 Beale St. SU 1-8846
Colo., Denver—Hendrie-Bolthoff Co., 1635 17th St. KE 4111
Utah, Salt Lake—Utility Engineers, 630 Dooly Bldg. 3-4682

WARREN STEAM PUMP CO., West Bridges Ave., Warren, Mass.

Pumps (centrifugal, reciprocating, rotary, screw).

Representatives

Calif., Los Angeles—Gil Moore & Co., 714 W. Olympic Blvd. RI 7-5101
Calif., San Francisco—Krogh Pump & Equipment Co., 515 Harrison St. YU 6-2100
Wash., Seattle—R. L. Dyer, 1218 Third Ave. MA 3443

WASHINGTON BELTING & RUBBER CO., 672 E. 11th St., Tacoma, Wash.

Belting (chain link, composition, conveyor, fabric, canvas, elevator, endless, wire), Belt fasteners and Belt lacings, Conveyors (belt, bucket, chain or link, foundry, vibrating), Pulleys (conveyor).

Branches

Wash., Everett—2923 Grand Ave. CE 3111
Wash., Seattle—2763 First Ave. So. EL 5650

JERVIS B. WEBB CO. OF CALIF. 9301 Rayo Ave., South Gate, Calif.

Conveyors (apron, automatic, bag and bale, belt, bucket, chain or link, continuous flow, drag, flight, foundry, live roller, overhead, pallet, pneumatic, screw, slat, trolley, vertical, special and other), Elevators (belt, bucket continuous flow), Trolleys.

See advertisement on page 23

Branches

Ariz., Phoenix—902 So. Central Ave. AL 2-7217
Calif., San Francisco—2166 Market St. KL 2-2700
Utah, Salt Lake—52 W. Second South St. 9-2171
Wash., Seattle—4305 Emerson St. AL 8770

JERVIS B. WEBB CO. OF CALIF., see **SPANMASTER CRANE DIV.**

WEIGH RIGHT AUTOMATIC SCALE CO., Mills Rd., Joliet, Ill.

Conveyors (bucket, vertical, special and other), Elevators (belt, bucket), Scales (packaging).

Representatives

Calif., Los Angeles—Peter D. Bowley & Assoc., 2205 Pasadena Ave. CA 2-5101
Calif., San Francisco—Peter D. Bowley & Assoc., 210 Mississippi St. HE 1-8162
Colo., Denver—Halsell Brokerage Co., 3101 Walnut St. TA 5-8798
Utah, Ogden—Frank J. Bott Co., P.O. Box 774
Wash., Seattle—Duncan Equipment Co., 506 Broadway. EA 3838

WELLINGTON MACHINE CO., 133 De Wolf St., Wellington, Ohio

Casters, Trucks (bag, barrel, drum, box type, die handling, dolly, elevating or lifting, factory and warehouse, hand, hand lift, packing house, paper roll, other), Wheels (general industrial, hand truck, rubber tired, trailer).

Representatives

Calf., Los Angeles—Davis Material Handling Co., 5649 Alhambra Ave. CA 2-7197
Colo., Denver—J. D. Whiting, P. O. Box 3382. GR 2134
Wash., Seattle—R. H. Brown Co., 502 First Ave. So. SE 0707

WENTWORTH & IRWIN, INC., 123 N. E. Oregon St., Portland 14, Ore.

Carts (hand, push), Loading Platforms, Racks (pallet, storage, other), Loading Ramps, Trailers (factory and warehouse, motor truck and tractor), Trucks (dolly, hand), House Moving Dollies.

WEST BEND EQUIPMENT CORP., P. O. Box 246, West Bend, Wisc.

Conveyors (belt), Elevators (barrel, continuous flow, portable, freight), Racks (pallet, storage), Stackers (portable electric, portable hand), Tables (elevating), Trailers (factory and warehouse), Trucks (bag, barrel, drum, box type, die handling, dolly, elevating or lifting, factory and warehouse, hand, hand lift, hand-mechanical or jack-type lift, hydraulic lift, pallet, sheet handling, skid handling), Wheels (hand truck, rubber tired).

See advertisement on page 134

Representatives

Calif., Pomona—Keville Industrial Service, 1590 Ganesha Place. LY 2-3977
Calif., San Francisco—Hamerslag Equipment Co., 45 Elmira St. JU 7-1357
Ore., Portland—Hallidie Machinery Co., 1545 S.E. Union St. FI 7491
Wash., Seattle—Hallidie Machinery Co., 210 Hudson St. LA 9520
Wash., Spokane—Hallidie Machinery Co., N 2605 Division St. EM 7131
Wash., Tacoma—Hallidie Machinery Co., 209 Floral Bldg. BR 2802

WESTERN CHAIN CO., 1807 Belmont Ave., Chicago 13, Ill.

Chains.

Representatives

Ariz., Phoenix—J. B. Magee & Co., 140 So. Central Ave. AL 3-8872
Calif., Los Angeles—M. D. Johnston Co., 464 E. Fourth St.
Calif., San Francisco—M. D. Johnston Co., 678 Howard St. YU 2-0686
Wash., Seattle—M. D. Johnston Co., 307 Occidental Ave.

WHITING CORP., 157th & Lathrop, Harvey, Ill.

Cranes (gantry, hand power, jib, pillar, swing, bracket, double beam overhead, electric and electric traveling overhead, foundry overhead, hand power traveling overhead, I beam overhead, locomotive overhead, monorail overhead).

Branches

Calif., Norwalk—14420 So. Bloomfield Ave. TO 4-2776
Wash., Seattle—1326 Fifth Ave. MU 1785

Representatives

Calif., Albany—H. E. Botsford Co., 660 San Pablo Ave. LA 4-6717
Calif., Los Angeles—James P. Kinney Co., 5141 Anaheim Telegraph Rd. AN 9-7411
Calif., San Francisco—Walter Dankas & Co., 1485 Bayshore Blvd. DE 3-5963

WHITNEY — YUBA

Calif., South Gate—California Crane & Equipment Corp., 10928 Vulcan St. LO 9-7108
Colo., Denver—Murray Sales Co., 16 Wazee Market. KE 5297
Colo., Denver—Peterson Co., 4949 Colorado Blvd. DE 3-5434
Ore., Portland—Ardies Machinery & Sales, 425 S. E. Ninth Ave. FI 7284
Ore., Portland—Fought & Co., 5595 No. Lagoon Ave. UK 4531
Utah, Salt Lake—James J. Burke Co., 422 W. Ninth South St. 3-1001
Wash., Seattle—A. H. Cox Co., 1757 First Ave. So., MA 1121
Wash., Seattle—Leckenby Structural Steel, 2745 11th Ave. S. W. SE 2877
Wash., Spokane—General Machinery Co., E. 3500 Riverside Ave. KE 1535
Wash., Spokane—Union Iron Works, E. 217 Montgomery St.

WHITNEY CHAIN CO., 237 Hamilton St., Hartford 2, Conn.
Chains.

Branches
Calif., Los Angeles—P.O. Box 58454, Vernon Station. LU 7-3151
Utah, Salt Lake—1676 E. Forest Hills Dr. 87-3520

Representatives
Calif., Los Angeles—Edward D. Maltby Co., 1718 So. Flower St.
Calif., Oakland—Bearing Engineering Co., 1019 Harrison St.
Calif., San Francisco—Bearing Engineering Co., 1547 Mission St.
Colo., Denver—Western Belting & Packing Co., 1720 Wazee St.
Idaho, Idaho Falls—Bearings Service & Supply Co., P.O. Box 562
Mont., Billings—Bearings Service & Supply Co., 15 No. 31st St.
Ore., Portland—Northwest Chains & Sprockets, Inc., 123 S.W. Pine St.
Utah, Salt Lake—Bearings Service & Supply Co., 1207 So. Main St.
Wash., Seattle—Northwest Chains & Sprockets, Inc., 3628 E. Marginal Way

WIRE BELT CO. OF AMERICA, 750 Main St., Cambridge 39, Mass.
Belting (conveyor, wire).

Representative
Calif., San Mateo—C. R. Becker, 3827 Fernwood St.

WORLEY & CO., 4820 So. Durfee Ave., Pico, Calif. RA 3-3245
Racks (storage).

Representatives
Ariz., Phoenix—Robert G. McKinney, 1130 W McDowell Rd. WH 5-5243
Calif., Fresno—R. S. Gilman, 416 Brown Ave. 7-4987
Calif., San Francisco—Trask & Squier, 39 Natoma St. SU 1-3473
N. Mex., Albuquerque—George Mayhew, 4130 Mesa Verde Dr. N.E. 5-8385
Ore., Portland—Allied Building Specialties, 2014 S.E. Ninth Ave. FI 6505
Utah, Salt Lake—Rex W. Williams & Son, 976 Fourth St. 5-6266
Wash., Seattle—Bryan W. Burtch Co., 2915 First Ave. So. MU 0880
Wash., Spokane—Fryer Ford Co., 612 Peyton Bldg. MA 4453
Hawaii, Honolulu—H. P. Ross, P.O. Box 54

YALE & TOWNE MFG. CO., 11000 Roosevelt Rd., Philadelphia 15, Pa.
Hoists (chain, crane, electric, hand, monorail, portable, traveling), Trucks (die handling, elevating or lifting, factory and warehouse, diesel fork, electric fork, gasoline fork, hand, motorized hand, industrial, gasoline lift, hand lift, hand-electric lift, hand-mechanical lift, hydraulic lift, power-driven lift, pallet, paper roll, skid handling, straddle, electric tiering), Tractors (electric warehouse).

Branches
Calif., Los Angeles—5141 Telegraph Rd. AN 9-1446
Calif., San Francisco—563 Second St. YU 2-3173

Representatives
Ariz., Phoenix—James P. Kinney Co., 1101 Grand Ave. AL 2-1558
Calif., Fresno—James P. Kinney Co., 2432 So. Railroad Ave. FR 2-6101
Calif., Los Angeles—James P. Kinney Co., 5141 Telegraph Rd. AN 9-7411
Calif., San Francisco—Industrial Truck Sales, 563 Second St. YU 6-4261
Colo., Denver—Joe Coursey Equipment Co., 1243 Walnut St. AC 2-9581
Idaho, Boise—Bunting Tractor Co., 4200 Federal Way. 3-6471
N. Mex., Albuquerque—James P. Kinney Co., 1706 Central Ave. S.E. 2-2830
Ore., Portland—Charles H. Day Co., 225 S.W. First Ave. CA 9189
Utah, Salt Lake—Materials Handling Engineers, Atlas Bldg. 5-8751
Wash., Seattle—H. L. McElhaney Co., 425 Alaskan Way. SE 5232
Wash., Spokane—Towne Equipment Co., 622 No. Monroe St. BR 0462

L. A. YOUNG SPRING & WIRE CORP., see **DAYBROOK HYDRAULIC DIV.**

YUBA MFG. CO., 701 East "H" St., Benicia, Calif.
Pulleys, internal driven (Schrock motorized head pulleys).

See advertisement on page 165

Branch
Calif., San Francisco—351 California St. EX 2-0274

Representatives
Ariz., Phoenix—Arizona Cedar Rapids Co., 1726 Jackson St.
Calif., Alhambra—Frank Cox Equipment Co., 3000 W. Valley Blvd.
Calif., Oakland—Bay Cities Equipment Co., 2606 Cypress St.
Calif., Stockton—Stockton Iron Works, P.O. Box 1331
Idaho, Boise—Idaho Sprocket & Machine Wks., 2400 Warm Springs Ave.
Nev., Reno—Sierra Machinery Co., 407 Morrill Ave.
N. Mex., Albuquerque—Lively Equipment Co., 2601 Fourth St.
Ore., Ashland—Fowler Engineering Sales Co., P.O. Box 162

A 4-PART PLAN to keep you up-to-date on plant operating equipment and methods

1. *Attend trade shows whenever possible. Manufacturers and distributors expend great efforts and expense in exhibiting the latest equipment and demonstrating latest methods.*

2. *Attend the meetings of local societies (i.e., materials handling organizations, the Plant Engineers Society, etc.), to interchange plant operating ideas with men from various industries.*

3. *Read at least two or three good business publications regularly. Here's the best plan:*

1 Read at least one publication devoted to your own field (i.e., if you are within the mining industry, read at least one journal devoted entirely to problems of the mining field.)

2 Read at least one publication that describes problems, equipment, and methods applicable in all types of industries. Only in such a publication can you learn valuable lessons from the experiences of plant operating executives in the many industries outside of your own. (On the "must" reading list in this category for Westerners, of course, is WESTERN INDUSTRY.)

4. *Make use of the "Reader Service" inquiry systems, like the one provided for your benefit by* WESTERN INDUSTRY, *to obtain valuable booklets published regularly by manufacturers and more information quickly about new products of possible benefit in your operations.*

Refer to the postcard page in this issue (page 149) for an explanation of how this system works. If you haven't yet used it as a way to keep up-to-date, begin this month—it's the easiest and fastest way yet devised.





CLASSIFIED PRODUCTS SECTION

If you are searching for a particular type of materials handling or industrial packaging product, look here under proper heading to obtain names of manufacturers—then refer to listings in "Where-to-Buy" Section to obtain pertinent buying information.

Only manufacturers are included in this Directory whose response to WESTERN INDUSTRY'S questionnaire indicated they have distributor or company offices within the 11 Western states. Therefore, you will save time by referring to this directory to locate nearest sources of supply or product information.

AXLES—trailer or truck

F. A. B. Mfg. Co.
Kay-Brunner Steel Products, Inc. (truck-trailer)
Little Giant Products, Inc.
Nutting Truck & Caster Co. (floor truck)
Selma Trailer & Mfg. Co.
United Mfg. Co.
Wentworth & Irwin, Inc.

BAGS—burlap

Ames Harris Neville Co.
Bemis Brothers Bag Co.

BAGS—canvas

Ames Harris Neville Co.
Bemis Brothers Bag Co.
C. R. Daniels, Inc.
Equipment Engineering Services

BAGS—multi-wall

Ames Harris Neville Co.
Bemis Brothers Bag Co.
Industrial Marking Equipment Co. (printing)

BAGS—shipping

Ames Harris Neville Co.
Bemis Brothers Bag Co.
C. R. Daniels, Inc.
Jiffy Mfg. Co.

BARRELS FOR SHIPPING—fibre

Continental Can Co.
National Vulcanized Fibre Co.
Rheem Mfg. Co.
Spaulding Fibre Co.

BARRELS FOR SHIPPING—other

Continental Can Co. (steel)
Duff California Co. (wood)
Republic Steel Corp. (steel)
Rheem Mfg. Co. (steel)
U. S. Rubber Co. (rubber, collapsible)

BASKETS—fibre

Convoy, Inc.
Robert Gair Co.
National Vulcanized Fibre Co.
Spaulding Fibre Co.
Spear Mfg. Co.

BASKETS—metal

Chas. Wm. Doepke Mfg. Co.
Market Forge Co.
Pacific Coast Industrial Equipment Corp.
Spear Mfg. Co.
Union Steel Products Co.

BASKETS—wire

Cyclone Fence Dept., American Steel & Wire Div., U. S. Steel Corp.
Equipment Engineering Services
Hewitt-Robins, Inc.
Pittsburgh Steel Products Co.
Spear Mfg. Co.
Union Steel Products Co.

BASKETS—other

Horace Blackman Co. (plastic)
C. R. Daniels, Inc.
Equipment Engineering Services (plastic)
Spear Mfg. Co.

BATTERIES

C & D Batteries, Inc.
Thomas A. Edison, Inc., Edison Storage Battery Div.
Exide Industrial Div., The Electric Storage Battery Co.
Gould-National Batteries, Inc.

BELTING—chain link

Conveyor Co.
Cyclone Fence Dept., American Steel & Wire Div., U. S. Steel Corp.
Hurt Conveyor Co.
Link-Belt Co.
Washington Belting & Rubber Co.

BELTING—composition

Conveyor Co.
L. P. Degen Belting Co.
Hurt Conveyor Co.
Victor Balata & Textile Belting Co.
Washington Belting & Rubber Co.

BELTING—conveyor

American Rubber Mfg. Co.
Barber-Greene Co.
Boston Woven Hose & Rubber Co.
Conveyor Co.
Cyclone Fence Dept., American Steel & Wire Div., U. S. Steel Corp.
C. R. Daniels, Inc.
Fetterman-Colfax Co.
Food Machinery and Chemical Corp., Packing Equipment Div.
Goodall Rubber Co.
B. F. Goodrich Co.
Hewitt-Robins, Inc.
Holz Tire & Rubber Co.
Hurt Conveyor Co.
Link-Belt Co.
May-Fran Engineering, Inc.
New York Belting & Packing Co.
Raybestos-Manhattan, Inc., Manhattan Rubber Div.
Republic Rubber Div., Lee Rubber & Tire Co.
Thermoid Co.
Ton-Tex Corp.
United States Rubber Co.
Victor Balata & Textile Belting Co.
Washington Belting & Rubber Co.
Wire Belt Co. of America

BELTING—fabric, canvas, etc.

Boston Woven Hose & Rubber Co.
Brown-Line Corp.
C. R. Daniels, Inc.
R & J Dick Co.
Fetterman-Colfax Co.
Gates Rubber Co.
Goodall Rubber Co.
Hurt Conveyor Co.
May-Fran Engineering, Inc.
Raybestos-Manhattan, Inc., Manhattan Rubber Div.
Ton-Tex Corp.
United States Rubber Co.
Victor Balata & Textile Belting Co. (Balata, canvas stitched, solid woven cotton)
Washington Belting & Rubber Co.

BELTING—elevator

American Rubber Mfg. Co.
Boston Woven Hose & Rubber Co.
Conveyor Co.
C. R. Daniels, Inc.
Fetterman-Colfax Co.
Goodall Rubber Co.
B. F. Goodrich Co.
Hewitt-Robins, Inc.
Hurt Conveyor Co.
Link-Belt Co.
New York Belting & Packing Co.
Raybestos-Manhattan, Inc., Manhattan Rubber Div.
Republic Rubber Div., Lee Rubber & Tire Co.
Thermoid Co.
United States Rubber Co.
Victor Balata & Textile Belting Co.
Washington Belting & Rubber Co.

BELTING—endless

American Rubber Mfg. Co.
Boston Woven Hose & Rubber Co.
Cyclone Fence Dept., American Steel & Wire Div., U. S. Steel Corp.
C. R. Daniels, Inc.
L. P. Degen Belting Co.
Gates Rubber Co.
Goodall Rubber Co.
B. F. Goodrich Co.
Hewitt-Robins, Inc.
New York Belting & Packing Co.
Raybestos-Manhattan, Inc., Manhattan Rubber Div.
Republic Rubber Div., Lee Rubber & Tire Co.
Thermoid Co.
Ton-Tex Corp.
United States Rubber Co.
Victor Balata & Textile Belting Co. (woven)
Washington Belting & Rubber Co.

BELTING—wire

Colorado Fuel & Iron Corp.
Conveyor Co.
Cyclone Fence Dept., American Steel & Wire Div., U. S. Steel Corp.
Gates Rubber Co.
Hewitt-Robins, Inc.
Victor Balata & Textile Belting Co.
Washington Belting & Rubber Co.
Wire Belt Co. of America

BELTING—other

American Pulley Co.
L. P. Degen Belting Co.
R & J Dick Co.
Gates Rubber Co.
Hewitt-Robins, Inc.
Holz Tire & Rubber Co.
E. F. Houghton & Co. (leather)
May-Fran Engineering, Inc. (hinged-steel and automatic chip removing conveyor)
New York Belting & Packing Co.
Reeves Pulley Co.
J. E. Rhoads & Sons (leather)
Victor Balata & Textile Belting Co. (Hycar, leather, neoprene)

BELT FASTENERS & BELT LACINGS

American Rubber Mfg. Co.
Bristol Co.
Brown-Line Corp.
Clipper Belt Lacer Co.
Crescent Belt Fastener Co.
L. P. Degen Belting Co.
R & J Dick Co.
Flexible Steel Lacing Co.
Goodall Rubber Co.
E. F. Houghton & Co.
J. E. Rhoads & Sons
Ton-Tex Corp.
Washington Belting & Rubber Co.

BINS

Bodinson Mfg. Co.
Borroughs Mfg. Co.
Brooks Equipment & Mfg. Co. (truck unit and container system)
Brown Rubber Co. (rubber-lined tanks, chutes and hoppers)
Butler Mfg. Co. (grain)
The Day Co. (bulk storage)
Dempster Brothers, Inc. (truck unit and container system)
Chas. Wm. Doepke Mfg. Co.
Equipto Div., Aurora Equipment Co.
Fab-Weld Corp.
Gar-Bro Mfg. Co.
Lippmann Engineering Works
Republic Steel Corp.
Spear Mfg. Co. (portable parts hoppers)
Syntron Co. (vibrators)
Tote System, Inc.

BOXES FOR SHIPPING—Corrugated and fibre

Beacon Machinery Co. (box compressors)
Fibreboard Products Inc.
Flintkote Co.
Robert Gair Co.
Gaylord Container Corp.
Longview Fibre Co.
National Vulcanized Fibre Co.
Schmidt Lithograph Co.
Sherman Paper Products of Calif.

BOXES FOR SHIPPING—wire bound, wooden and fibreboard

Duff California Co.
Martin Brothers Box Co.

BOXES FOR SHIPPING—other

Auto Sheet Metal Works (corrugated steel)
Brown Trailers, Inc. (aluminum)
Fab-Weld Corp. (steel)
General Nailing Machine Corp. (wooden box making machine and box lidding machine)
Jiffy Mfg. Co. (liners)
G. B. Lewis Co. (woven wood and wire returnable, stacking, skid)
Noble Co.
Pittsburgh Steel Products Co.
Powell Pressed Steel Co. (production boxes and stands)
Republic Steel Corp.
Sherman Paper Products of Calif.
Tote System, Inc.
Union Steel Products Co.

BOXES, TOTE

Auto Sheet Metal Works
Horace Blackman Co.
Brown Trailers, Inc. (aluminum)
Convoy, Inc.
Chas. Wm. Doepke Mfg. Co.
Equipment Engineering Services (plastic)
Robert Gair Co.
Gaylord Container Corp. (fibre)
Industrial Skid & Pallet Co.
G. B. Lewis Co. (polyester)
Masonite Corp.
Multaframe of California, Inc.
National Vulcanized Fibre Co.
Palmer-Shile Co.
Powell Pressed Steel Co. (steel)
Republic Steel Corp.
Spaulding Fibre Co.
Tote System, Inc.

CARTS—hand and push

Auto Sheet Metal Works
Equipto Div., Aurora Equipment Co.
The Fairbanks Co.
Fetterman-Colfax Co.

Gar-Bro Mfg. Co.
Jackson Mfg. Co.
Jakes Foundry Co.
Lewis-Shepard Products, Inc.
Magline, Inc.
Market Forge Co.
Multaframe of California, Inc.
Nutting Truck & Caster Co.
Roll Rite Corp.
Selma Trailer & Mfg. Co.
Taylor Mfg. Co.
Wentworth & Irwin, Inc.

CARTS—other

Autoette, Inc.
Equipto Div., Aurora Equipment Co.
Gar-Bro Mfg. Co.
Jakes Foundry Co.
Lewis-Shepard Products, Inc.
Lyon Metal Products, Inc. (stock and service)
Market Forge Co.
Pacific Car & Foundry Co. (log)
Pacific Coast Industrial Equipment Corp.
Roll Rite Corp.
Selma Trailer & Mfg. Co.
Taylor Mfg. Co. (electric)

CASTERS

Accrol Co.
Albion Industries
Bassick Co.
Colson Corp.
Darnell Corp.
Divine Brothers Co.
Fab-Weld Corp.
Fairbanks Co.
Faultless Caster Corp.
Jakes Foundry Co.
Nutting Truck & Caster Co.
Rapids Standard Co.
Roll Rite Corp.
Saginaw Products Corp.
Spaulding Fibre Co.
United Mfg. Co.
Wellington Machine Co.

CHAINS

American Chain & Cable Co.
Campbell Chain Co.
Chain Belt Co.
L. P. Degen Belting Co.
Diamond Chain Co. (roller)
R & J Dick Co.
Electric Steel Foundry Co.
Jeffrey Mfg. Co.
Link-Belt Co.
McKay Co.
Ohio Hoist & Mfg. Co.
Peerless Chain Co.
Republic Steel Corp.
Universal Cranehoist & Monorail Co.
Western Chain Co.
Whitney Chain Co.

CLUTCHES—safety

Flaton Machine Works

CONVEYORS—apron

Alvey Conveyor Mfg. Co.
A. J. Bayer Co.
Bodinson Mfg. Co.
Chain Belt Co.
E. W. Buschman Co.
J. D. Christian Engineers Conveyor Co.
Fairfield Engineering Co.
Griffith Equipment Co.
Hapman Conveyors, Inc., Div. of Hapman-Dutton Co.
Hurt Conveyor Co.
Island Equipment Corp.
Jeffrey Mfg. Co.
Link-Belt Co.
Lippmann Engineering Works
Mathews Conveyor Co. West Coast Mechanical Handling Systems, Inc.
Standard Conveyor Co.
Stephens-Adamson Mfg. Co.
Jervis B. Webb Co. of Calif.

CONVEYORS—automatic

Alvey Conveyor Mfg. Co.
A. J. Bayer Co.
E. W. Buschman Co.
Chainveyor Corp.
J. D. Christian Engineers
Cleveland Crane & Engineering Co.
Conveyor Co.
Fairfield Engineering Co.
Flexoveyor Mfg. Co.
Food Machinery & Chemical Corp., Packing Equipment Div.
General Nailing Machine Corp.
Griffith Equipment Co.
Hurt Conveyor Co.
Jeffrey Mfg. Co.
Lamson Corp.
Link-Belt Co.
Mathews Conveyor Co. West Coast Mechanical Handling Systems, Inc.
Richards-Wilcox Mfg. Co.
Standard Conveyor Co.
Stephens-Adamson Mfg. Co.
Jervis B. Webb Co. of Calif.

CONVEYORS—bag and bale

Alvey Conveyor Mfg. Co.
A. J. Bayer Co.
Belt Corp.
E. W. Buschman Co.
J. D. Christian Engineers Conveyor Co.
Fairfield Engineering Co.
Fetterman-Colfax Co.
Flexoveyor Mfg. Co.
Food Machinery & Chemical Corp., Packing Equipment Div.
Hurt Conveyor Co.
Jeffrey Mfg. Co.
Lamson Corp.
Link-Belt Co.
Lippman Engineering Works
Mathews Conveyor Co. West Coast Mechanical Handling Systems, Inc.
Metzgar Conveyor Co.
New London Engineering Co.
Power-Curve Conveyor Co.
Standard Conveyor Co.
Stephens-Adamson Mfg. Co.
Jervis B. Webb Co. of Calif.

CONVEYORS—belt

Alvey Conveyor Mfg. Co.
Barber-Greene Co.
A. J. Bayer Co.
John Bean Div., Food Machinery & Chemical Corp.
Belt Corp.
Bodinson Mfg. Co.
E. W. Buschman Co.
Chain Belt Co.
J. D. Christian Engineers Conveyor Co.
L. P. Degen Belting Co.
Fairfield Engineering Co.
Harry J. Ferguson Co.
Fetterman-Colfax Co.
Flexoveyor Mfg. Co.
Food Machinery & Chemical Corp., Packing Equipment Div.
General Nailing Machine Corp.
Goodall Rubber Co.
Hewitt-Robins, Inc.
Hurt Conveyor Co.
Island Equipment Corp.
Jeffrey Mfg. Co.
Joy Mfg. Co.
Lamson Corp.
Link-Belt Co.
Lippmann Engineering Works
Mathews Conveyor Co. West Coast Mechanical Handling Systems, Inc.
Metzgar Conveyor Co.
New London Engineering Co.
New York Belting & Packing Co.
Nichols Conveyor & Engineering Co.
Noble Co.
Oliver Corp.
Pacific Coast Industrial Equipment Corp.
Paramount Mfg. Co.
Raybestos-Manhattan, Inc., Manhattan Rubber Div.
Rapids Standard Co.
Standard Conveyor Co.
Stephens-Adamson Mfg. Co.
United States Rubber Co.
Universal Hoist & Mfg. Co.
Washington Belting & Rubber Co.
Jervis B. Webb Co. of Calif.
West Bend Equipment Corp.

CONVEYORS—bucket

Alvey Conveyor Mfg. Co.
A. J. Bayer Co.
Bodinson Mfg. Co.
E. W. Buschman Co.
Chain Belt Co.
J. D. Christian Engineers Conveyor Co.
L. P. Degen Belting Co.
Fairfield Engineering Co.
Fetterman-Colfax Co.
Hapman Conveyors, Inc., Div. of Hapman-Dutton Co.
Hewitt-Robins, Inc.
Hurt Conveyor Co.
Jeffrey Mfg. Co.
Link-Belt Co.
Lippmann Engineering Works
Mechanical Handling Systems, Inc.
Nichols Conveyor & Engineering Co.
Raybestos-Manhattan, Inc., Manhattan Rubber Div.
Stephens-Adamson Mfg. Co.
Universal Hoist & Mfg. Co.
Washington Belting & Rubber Co.
Jervis B. Webb Co. of Calif.
Weigh Right Automatic Scale Co.

CONVEYORS—chain or link

Alvey Conveyor Mfg. Co.
A. J. Bayer Co.
Belt Corp.
E. W. Buschman Co.
Chain Belt Co.
Chainveyor Corp.
J. D. Christian Engineers
Colorado Fuel & Iron Corp.
Conveyor Co.
Diamond Chain Co.
Electric Steel Foundry Co.
Fairfield Engineering Co.
Harry J. Ferguson Co.
Fetterman-Colfax Co.
Food Machinery & Chemical Corp., Packing Equipment Div.
General Nailing Machine Corp.
Hapman Conveyors, Inc., Div. of Hapman-Dutton Co.
Hurt Conveyor Co.
Island Equipment Corp.
Jeffrey Mfg. Co.
Link-Belt Co.
Mathews Conveyor Co. West Coast Mechanical Handling Systems, Inc.
Ohio Hoist & Mfg. Co.
Pacific Coast Industrial Equipment Corp.
Paramount Mfg. Co.
Raybestos-Manhattan, Inc., Manhattan Rubber Div.
Richards-Wilcox Mfg. Co.
Standard Conveyor Co.
Stephens-Adamson Mfg. Co.
Union Steel Products Co.
Washington Belting & Rubber Co.
Jervis B. Webb Co. of Calif.

CONVEYORS—continuous flow

American MonoRail Co.
A. J. Bayer Co.
John Bean Div., Food Machinery & Chemical Corp.
Bosworth Mfg. Co.
E. W. Buschman Co.
J. D. Christian Engineers
Electric Steel Foundry Co.
Fairfield Engineering Co.
Fetterman-Colfax Co.
Food Machinery & Chemical Corp., Packing Equipment Div.
Hapman Conveyors, Inc., Div. of Hapman-Dutton Co.
Jeffrey Mfg. Co.
Lamson Corp.
Landahl Conveyor Co., Div. of American MonoRail Co.
Link-Belt Co.
Mathews Conveyor Co. West Coast Mechanical Handling Systems, Inc.
Oliver Corp.
Pacific Coast Industrial Equipment Corp.
Paramount Mfg. Co.
Rapids Standard Co.
Richards-Wilcox Mfg. Co.
Screw Conveyor Co.
Standard Conveyor Co.
Stephens-Adamson Mfg. Co.
Jervis B. Webb Co. of Calif.

CONVEYORS—drag

Alvey Conveyor Mfg. Co.
A. J. Bayer Co.
Belt Corp.
Bodinson Mfg. Co.
Bosworth Mfg. Co.
E. W. Buschman Co.
Chain Belt Co.
J. D. Christian Engineers Conveyor Co.
Electric Steel Foundry Co.
Fairfield Engineering Co.
Fetterman-Colfax Co.
Hapman Conveyors, Inc., Div. of Hapman-Dutton Co.
Hurt Conveyor Co.
Jeffrey Mfg. Co.
Lamson Corp.
Link-Belt Co.
Mathews Conveyor Co. West Coast Mechanical Handling Systems, Inc.
Modern Crane & Conveyor Co.
Oliver Corp.
Pacific Coast Industrial Equipment Corp.
Sauerman Bros., Inc.
Stephens-Adamson Mfg. Co.
Universal Hoist & Mfg. Co.
Jervis B. Webb Co. of Calif.

CONVEYORS—flight

Alvey Conveyor Mfg. Co.
A. J. Bayer Co.
Belt Corp.
Bodinson Mfg. Co.
Bosworth Mfg. Co.
E. W. Buschman Co.
Chain Belt Co.
J. D. Christian Engineers Conveyor Co.
Electric Steel Foundry Co.
Fairfield Engineering Co.
Fetterman-Colfax Co.
Food Machinery & Chemical Corp., Packing Equipment Div.
Hapman Conveyors, Inc., Div. of Hapman-Dutton Co.
Holz Tire & Rubber Co.
Houdaille-Hershey of Indiana
Hurt Conveyor Co.
Jeffrey Mfg. Co.
Joy Mfg. Co.
Lamson Corp.
Link-Belt Co.
Lippmann Engineering Works
Mathews Conveyor Co. West Coast Mechanical Handling Systems, Inc.
Metzgar Conveyor Co.
Pacific Coast Industrial Equipment Corp.
Paramount Mfg. Co.
Standard Conveyor Co.
Stephens-Adamson Mfg. Co.
Jervis B. Webb Co. of Calif.

CONVEYORS—foundry

Alvey Conveyor Mfg. Co.
American MonoRail Co.
A. J. Bayer Co.
Bosworth Mfg. Co.
E. W. Buschman Co.
Chain Belt Co.
J. D. Christian Engineers
Cleveland Crane & Engineering Co.
Conveyor Co.
Fairfield Engineering Co.
Fetterman-Colfax Co.
Hapman Conveyors, Inc., Div. of Hapman-Dutton Co.
Jeffrey Mfg. Co.
Joy Mfg. Co.
Link-Belt Co.
Lippmann Engineering Works
Mathews Conveyor Co. West Coast Mechanical Handling Systems, Inc.
New London Engineering Co.
Richards-Wilcox Mfg. Co.
Stephens-Adamson Mfg. Co.
Washington Belting & Rubber Co.
Jervis B. Webb Co. of Calif.

CONVEYORS—gravity roller

Alvey Conveyor Mfg. Co.
A. J. Bayer Co.
John Bean Div., Food Machinery & Chemical Corp.
The Boman Co.
E. W. Buschman Co.
J. D. Christian Engineers Conveyor Co.
Fairfield Engineering Co.
Harry J. Ferguson Co.
Fetterman-Colfax Co.
Food Machinery & Chemical Corp., Packing Equipment Div.
Hurt Conveyor Co.
Lamson Corp.
Lippmann Engineering Works
Magline, Inc.
Mathews Conveyor Co. West Coast Mechanical Handling Systems, Inc.
Metzgar Conveyor Co.
Oliver Corp.
Rapids Standard Co.
Saginaw Products Corp.
Speedways Conveyors, Inc.

CONVEYORS—live roller

A. J. Bayer Co.
John Bean Div., Food Machinery & Chemical Corp.
E. W. Buschman Co.
J. D. Christian Engineers
Harry J. Ferguson Co.
Fairfield Engineering Co.
Fetterman-Colfax Co.
Food Machinery & Chemical Corp., Packing Equipment Div.

Hurt Conveyor Co.
Island Equipment Corp.
Jeffrey Mfg. Co.
Lamson Corp.
Lippmann Engineering Works
Mathews Conveyor Co. West Coast
Mechanical Handling Systems, Inc.
Metzgar Conveyor Co.
Oliver Corp.
Rapids Standard Co.
Speedways Conveyors, Inc.
Jervis B. Webb Co. of Calif.

CONVEYORS—overhead

American MonoRail Co.
A. J. Bayer Co.
E. W. Buschman Co.
California Tramrail Co.
Chainveyor Corp.
J. D. Christian Engineers
Cleveland Crane & Engineering Co.
Food Machinery & Chemical Corp., Packing Equipment Div.
Hurt Conveyor Co.
Lamson Corp.
Link-Belt Co.
Lippmann Engineering Works
Louden Machinery Co.
Mathews Conveyor Co. West Coast
Mechanical Handling Systems, Inc.
Modern Crane & Conveyor Co.
Pacific Coast Industrial Equipment Corp.
Geo. M. Prescott Co.
Rapids Standard Co.
Richards-Wilcox Mfg. Co.
Saginaw Products Corp.
Jervis B. Webb Co. of Calif.

CONVEYORS—pallet

E. W. Buschman Co.
J. D. Christian Engineers
Harry J. Ferguson Co.
Flexoveyor Mfg. Co.
Food Machinery & Chemical Corp., Packing Equipment Div.
Lamson Corp.
Link-Belt Co.
Lippmann Engineering Works
Mathews Conveyor Co. West Coast
Mechanical Handling Systems, Inc.
Metzgar Conveyor Co.
Rapids Standard Co.
Roll Rite Corp.
Jervis B. Webb Co. of Calif.

CONVEYORS—pneumatic

The Day Co.
Fuller Co.
Mechanical Handling Systems, Inc.
Jervis B. Webb Co. of Calif.

CONVEYORS—portable

Alvey Conveyor Mfg. Co.
Baldwin-Lima-Hamilton Corp.
Barber-Greene Co.
John Bean Div., Food Machinery & Chemical Corp.
Belt Corp.
Bosworth Mfg. Co.
E. W. Buschman Co.
J. D. Christian Engineers
Fairfield Engineering Co.
Harry J. Ferguson Co.
Fetterman-Colfax Co.
Flexoveyor Mfg. Co.
Food Machinery & Chemical Corp., Packing Equipment Div.
Hurt Conveyor Co.
Island Equipment Corp.
Joy Mfg. Co.
Lippmann Engineering Works
Mathews Conveyor Co. West Coast
May-Fran Engineering, Inc.
Mechanical Handling Systems, Inc.
Metzgar Conveyor Co.
New London Engineering Co.
Pacific Coast Industrial Equipment Corp.
Paramount Mfg. Co.
Power-Curve Conveyor Co.
Geo. M. Prescott Co.
Rapids Standard Co.

CONVEYORS—screw

E. W. Buschman Co.
J. D. Christian Engineers
Conveyor Co.
Fairfield Engineering Co.
Fetterman-Colfax Co.
Fort Worth Steel & Machinery Co.
Jeffrey Mfg. Co.
Link-Belt Co.
Lippmann Engineering Works
Mechanical Handling Systems, Inc.
Noble Co.
Screw Conveyor Corp.
Stephens-Adamson Mfg. Co.
Jervis B. Webb Co. of Calif.

CONVEYORS—skate

Alvey Conveyor Mfg. Co.
A. J. Bayer Co.
John Bean Div., Food Machinery & Chemical Corp.
The Boman Co.
E. W. Buschman Co.
J. D. Christian Engineers
Conveyor Co.
Harry J. Ferguson Co.
Fetterman-Colfax Co.
Food Machinery & Chemical Corp., Packing Equipment Div.
General Nailing Machine Corp.
Griffith Equipment Co.
Lamson Corp.
Lippmann Engineering Works
Market Forge Co.
Mathews Conveyor Co. West Coast
Mechanical Handling Systems, Inc.
Metzgar Conveyor Co.
Rapids Standard Co.
Speedways Conveyors, Inc.

CONVEYORS—slat

A. J. Bayer Co.
E. W. Buschman Co.
Chain Belt Co.
J. D. Christian Engineers
Fairfield Engineering Co.
Harry J. Ferguson Co.
Fetterman-Colfax Co.
Food Machinery & Chemical Corp., Packing Equipment Div.
Hapman Conveyors, Inc., Div. of Hapman-Dutton Co.
Hurt Conveyor Co.
Jeffrey Mfg. Co.
Lamson Corp.
Link-Belt Co.
Lippmann Engineering Works
Mathews Conveyor Co. West Coast
May-Fran Engineering, Inc.
Mechanical Handling Systems, Inc.
Pacific Coast Industrial Equipment Corp.
Stephens-Adamson Mfg. Co.
Jervis B. Webb Co. of Calif.

CONVEYORS—trolley

American MonoRail Co.
A. J. Bayer Co.
E. W. Buschman Co.
California Tramrail Co.
Chainveyor Corp.
J. D. Christian Engineers
Cleveland Crane & Engineering Co.
Food Machinery & Chemical Corp., Packing Equipment Div.
Lamson Corp.
Landahl Conveyor Co., Div. of American MonoRail Co.
Link-Belt Co.
Mathews Conveyor Co. West Coast
Mechanical Handling Systems, Inc.
Modern Crane & Conveyor Co.
Pacific Coast Industrial Equipment Corp.
Geo. M. Prescott Co.
Rapids Standard Co.
Richards-Wilcox Mfg. Co.
Jervis B. Webb Co. of Calif.

CONVEYORS—vertical

A. J. Bayer Co.
Bosworth Mfg. Co.
E. W. Buschman Co.
Carrier Conveyor Corp.
J. D. Christian Engineers
Fairfield Engineering Co.
Fetterman-Colfax Co.
Fort Worth Steel & Machinery Co.
Hapman Conveyors, Inc., Div. of Hapman-Dutton Co.
Hewitt-Robins, Inc.
Lamson Corp.
Link-Belt Co.
Mathews Conveyor Co. West Coast
Mechanical Handling Systems, Inc.
Rapids Standard Co.
Universal Hoist & Mfg. Co.
Jervis B. Webb Co. of Calif.
Weigh Right Automatic Scale Co.

CONVEYORS—vibrating

Carrier Conveyor Corp.
J. D. Christian Engineers
Conveyor Co.
Fairfield Engineering Co.
Food Machinery & Chemical Corp., Packing Equipment Div.
Hewitt-Robins, Inc.
Jeffrey Mfg. Co.
Link-Belt Co.
Stephens-Adamson Mfg. Co.
Syntron Co.
Washington Belting & Rubber Co.

CONVEYORS—zipper

Stephens-Adamson Mfg. Co.

CONVEYORS—special and other

John Bean Div., Food Machinery & Chemical Corp.
E. W. Buschman Co. (cable)
Chainveyor Corp. (combination power and free)
J. D. Christian Engineers
CraneVeyor Corp.
Duct-o-Wire Co. (electrical crane and monorail conductor systems)
Fairfield Engineering Co.
Flexoveyor Mfg. Co.
Food Machinery and Chemical Corp., Packing Equipment Div.
Griffith Equipment Co.
Hapman Conveyors, Inc., Div. of Hapman-Dutton Co.
Hewitt-Robins, Inc.
Jeffrey Mfg. Co.
Lamson Corp.
Mathews Conveyor Co., West Coast
May-Fran Engineering, Inc. (portable and adjustable)
Mechanical Handling Systems, Inc.
Metzgar Conveyor Co.
New London Engineering Co.
Richards-Wilcox Mfg. Co.
Screw Conveyor Corp.
Speedways Conveyors, Inc.
Jervis B. Webb Co. of Calif.
Weigh Right Automatic Scale Co.

CRANES—charging and drawing

Crane Hoist Engineering Corp.
Harnischfeger Corp.
Manning, Maxwell & Moore, Inc.

CRANES—gantry

American Hoist & Derrick Co.
American MonoRail Co.
Berger Engineering Co.
California Tramrail Co.
Cleveland Crane & Engineering Co.
Clyde Iron Works
Colby Steel & Mfg., Inc.
Crane Hoist Engineering Corp.
CraneVeyor Corp.
Cyclops Iron Works
Downs Crane & Hoist Co.
Ederer Engineering Co.
Euclid Crane & Hoist Co.
Harnischfeger Corp.
Harrington Co.
Louden Machinery Co.
Manning, Maxwell & Moore, Inc.
Modern Crane & Conveyor Co.
Moffett Engineering Co.
Noble Co.
Ohio Hoist & Mfg. Co.
Ohio Tramrail Div. The Forker Corp.
Pacific Coast Engineering Co.
Robbins & Meyers, Inc., Hoist & Crane Div.
Shepard Niles Crane & Hoist Corp.
Spanmaster Crane Div., Jervis B. Webb Co. of Calif.
Star Iron & Steel Co.
Universal Cranehoist & Monorail Co.
Whiting Corp.

CRANES—hand power

American Chain & Cable Co.
American MonoRail Co.
California Tramrail Co.
Chisholm-Moore Hoist Div., Columbus McKinnon Chain Corp.
Cleveland Crane & Engineering Co.
Crane Hoist Engineering Corp.
CraneVeyor Corp.
Cyclops Iron Works
Downs Crane & Hoist Co.
Ederer Engineering Co.
Euclid Crane & Hoist Co.
Harnischfeger Corp.
Lewis-Shepard Products, Inc.
Manning, Maxwell & Moore, Inc.
Modern Crane & Conveyor Co.
Moffett Engineering Co.
Ohio Hoist & Mfg. Co.
Ohio Tramrail Div., The Forker Corp.
Philadelphia Chain Block & Mfg. Co.
Revolvator Co.
Richards-Wilcox Mfg. Co.
Robbins & Meyers, Inc., Hoist & Crane Div.
Sasgen Derrick Co.
Shepard Niles Crane & Hoist Corp.
Spanmaster Crane Div., Jervis B. Webb Co. of Calif.
Star Iron & Steel Co.
Unit Mfg. Co.
Universal Cranehoist & Monorail Co.
Whiting Corp.

CRANES—jib, pillar, swing, bracket

American Chain & Cable Co.
American MonoRail Co.
Berger Engineering Co.
California Tramrail Co.
Chisholm-Moore Hoist Div., Columbus McKinnon Chain Corp.
Cleveland Crane & Engineering Co.
Crane Hoist Engineering Corp.
CraneVeyor Corp.
Cyclops Iron Works
Downs Crane & Hoist Co.
Ederer Engineering Co.
Euclid Crane & Hoist Co.
Harnischfeger Corp.
Harrington Co.
Louden Machinery Co.
Manning, Maxwell & Moore, Inc.
Modern Crane & Conveyor Co.
Moffett Engineering Co.
Nichols Conveyor & Engineering Co.
Ohio Hoist & Mfg. Co.
Ohio Tramrail Div., The Forker Corp.
Richards-Wilcox Mfg. Co.
Rotary Lift Co.
Shepard Niles Crane & Hoist Corp.
Spanmaster Crane Div., Jervis B. Webb Co. of Calif.
Universal Cranehoist & Monorail Co.
Whiting Corp.

CRANES—overhead, double beam

American Chain & Cable Co.
American MonoRail Co.
Berger Engineering Co.
California Tramrail Co.
Cleveland Crane & Engineering Co.
Crane Hoist Engineering Corp.
CraneVeyor Corp.
Cyclops Iron Works
Downs Crane & Hoist Co.
Ederer Engineering Co.
Euclid Crane & Hoist Co.
Harnischfeger Corp.
Louden Machinery Co.
Manning, Maxwell & Moore, Inc.
Modern Crane & Conveyor Co.
Moffett Engineering Co.
Noble Co.
Ohio Hoist & Mfg. Co.
Pacific Coast Engineering Co.
Pacific Coast Industrial Equipment Corp.
Richards-Wilcox Mfg. Co.
Robbins & Meyers, Inc., Hoist & Crane Div.
Shepard Niles Crane & Hoist Corp.
Spanmaster Crane Div., Jervis B. Webb Co. of Calif.
Star Iron & Steel Co.
Universal Cranehoist & Monorail Co.
Whiting Corp.

CRANES—overhead, electric and electric traveling

American Chain & Cable Co.
American MonoRail Co.
Berger Engineering Co.
California Tramrail Co.
Cleveland Crane & Engineering Co.
Colby Steel & Mfg., Inc.
Crane Hoist Engineering Corp.
CraneVeyor Corp.
Cyclops Iron Works
Downs Crane & Hoist Co.
Euclid Crane & Hoist Co.
Harnischfeger Corp.
Louden Machinery Co.
Manning, Maxwell & Moore, Inc.
Market Forge Co.
Modern Crane & Conveyor Co.
Moffett Engineering Co.
Noble Co.
Ohio Hoist & Mfg. Co.
Ohio Tramrail Div., The Forker Corp.
Pacific Coast Engineering Co.
Pacific Coast Industrial Equipment Corp.
Richards-Wilcox Mfg. Co.
Robbins & Myers, Inc., Hoist & Crane Div.

Shepard Niles Crane & Hoist Corp.
Spanmaster Crane Div., Jervis B. Webb Co. of Calif.
Star Iron & Steel Co.
Universal Cranehoist & Monorail Co.
Whiting Corp.

CRANES—overhead, foundry

American Crain & Cable Co.
American MonoRail Co.
California Tramrail Co.
Cleveland Crane & Engineering Co.
Crane Hoist Engineering Corp.
CraneVeyor Corp.
Cyclops Iron Works
Ederer Engineering Co.
Harnischfeger Corp.
Louden Machinery Co.
Manning, Maxwell & Moore, Inc.
Moffett Engineering Co.
Noble Co.
Ohio Hoist & Mfg. Co.
Ohio Tramrail Div., The Forker Corp.
Pacific Coast Engineering Co.
Pacific Coast Industrial Equipment Corp.
Richards-Wilcox Mfg. Co.
Robbins & Meyers, Inc., Hoist & Crane Div.
Shepard Niles Crane & Hoist Corp.
Spanmaster Crane Div., Jervis B. Webb Co. of Calif.
Universal Cranehoist & Monorail Co.
Whiting Corp.

CRANES—overhead, hand power traveling

American Chain & Cable Co.
American MonoRail Co.
California Tramrail Co.
Chisholm-Moore Hoist Div., Columbus McKinnon Chain Corp.
Cleveland Crane & Engineering Co.
Crane Hoist Engineering Corp.
CraneVeyor Corp.
Cyclops Iron Works
Downs Crane & Hoist Co.
Ederer Engineering Co.
Euclid Crane & Hoist Co.
Harnischfeger Corp.
Harrington Co.
Louden Machinery Co.
Manning, Maxwell & Moore, Inc.
Modern Crane & Conveyor Co.
Moffett Engineering Co.
Ohio Hoist & Mfg. Co.
Ohio Tramrail Div., The Forker Corp.
Pacific Coast Industrial Equipment Corp.
Richards-Wilcox Mfg. Co.
Robbins & Myers, Inc., Hoist & Crane Div.
Shepard Niles Crane & Hoist Corp.
Spanmaster Crane Div., Jervis B. Webb Co. of Calif.
Star Iron & Steel Co.
Universal Cranehoist & Monorail Co.
Whiting Corp.

CRANES—overhead, "I" beam

American Chain & Cable Co.
California Tramrail Co.
Chisholm-Moore Hoist Div., Columbus McKinnon Chain Corp.
J. D. Christian Engineers
Cleveland Crane & Engineering Co.
Crane Hoist Engineering Corp.
CraneVeyor Corp.
Cyclops Iron Works
Downs Crane & Hoist Co.
Ederer Engineering Co.
Euclid Crane & Hoist Co.
Harnischfeger Corp.
Harrington Co.
Louden Machinery Co.
Manning, Maxwell & Moore, Inc.
Modern Crane & Conveyor Co.
Moffett Engineering Co.
Ohio Hoist & Mfg. Co.
Ohio Tramrail Div., The Forker Corp.
Pacific Coast Industrial Equipment Corp.
Richards-Wilcox Mfg. Co.
Robbins & Myers, Inc., Hoist & Crane Div.
Shepard Niles Crane & Hoist Corp.
Spanmaster Crane Div., Jervis B. Webb Co. of Calif.
Star Iron & Steel Co.
Universal Cranehoist & Monorail Co.
Whiting Corp.

CRANES—overhead, locomotive

Cleveland Crane & Engineering Co.
Crane Hoist Engineering Corp.
Ederer Engineering Co.
Harrington Co.
Ohio Hoist & Mfg. Co.
Shepard Niles Crane & Hoist Corp.
Universal Cranehoist & Monorail Co.
Whiting Corp.

CRANES—overhead, monorail

American Chain & Cable Co.
American MonoRail Co.
California Tramrail Co.
Cleveland Crane & Engineering Co.
Crane Hoist Engineering Corp.
CraneVeyor Corp.
Cyclops Iron Works
Ederer Engineering Co.
Harnischfeger Corp.
Louden Machinery Co.
Modern Crane & Conveyor Co.
Ohio Hoist & Mfg. Co.
Ohio Tramrail Div., The Forker Corp.
Pacific Coast Industrial Equipment Corp.
Richards-Wilcox Mfg. Co.
Robbins & Myers, Inc., Hoist & Crane Div.
Shepard Niles Crane & Hoist Corp.
Spanmaster Crane Div., Jervis B. Webb Co. of Calif.
Universal Cranehoist & Monorail Co.
Whiting Corp.

CRANES—yard (truck, tractor)

Allis- Chalmers Mfg. Co.
American Hoist & Derrick Co.
Austin-Western Co.
Baker-Raulang Co.
Baldwin-Lima-Hamilton Corp.
Boman Co.
Bucyrus-Erie Co.
Clyde Iron Works
Coles Cranes, Inc.
Deere & Co.
Hanson Clutch & Machinery Co.
Harnischfeger Corp.
"HH" Manufacturers
Hughes-Keenan Corp.
Hyster Co.
Insley Mfg. Co.
Koehring Co.
LeTourneau-Westinghouse Co.
Marion Power Shovel Co.
Northwest Engineering Co.
"Quick-Way" Truck Shovel Co.
Silent Hoist & Crane Co.
Thew Shovel Co.
Towmotor Corp.
Unit Crane & Shovel Corp.

CRANES—other

Colby Steel & Mfg., Inc. (whirley and hammerhead)
W. C. Dillon & Co. (signals for overhead)
Duct-O-Wire (electrical crane and monorail conductor systems)
Maxi Corp. (self-propelled crane carriers)
Mefco Sales & Service Corp. (controls)
Pacific Car & Foundry Co. (crane booms and tractor)
Schield Bantam Co. (wagon)

DOCK BOARDS

A. J. Bayer Co.
Beacon Machinery, Inc.
Bronco Products Co. (magnesium)
Fab-Weld Corp.
Globe Hoist Co.
Joyce Cridland Co. (hydraulic adjustable)
Kelley Co.
Magline, Inc.
Magnesium Products of Milwaukee
Penco Engineering Co.
Roll Rite Corp.
Rotary Lift Co.

DOLLIES (see TRUCKS—dolly)

DOOR CONTROLS

Holzer-Cabot Div., National Pneumatic Co.

ELEVATORS—barrel, package, etc.

Barrett-Cravens Co.
A. J. Bayer Co.
Bodinson Mfg. Co.
E. W. Buschman Co.
Chain Belt Co.
J. D. Christian Engineers
Fairfield Engineering Co.
Flexoveyor Mfg. Co.
Globe Hoist Co.
Griffith Equipment Co.
Hurt Conveyor Co.
Mathews Conveyor Co. West Coast Mechanical Handling Systtems, Inc.
West Bend Equipment Corp.

ELEVATORS—belt

John Bean Div., Food Machinery & Chemical Corp.
Bodinson Mfg. Co.
E. W. Buschman Co.
Chain Belt Co.
J. D. Christian Engineers
Conveyor Co.
Fairfield Engineering Co.
Fetterman-Colfax Co.
General Nailing Machine Corp.
Goodall Rubber Co.
B. F. Goodrich Co.
Hewitt-Robins, Inc.
Humphrey Elevator Co.
Hurt Conveyor Co.
Jeffrey Mfg. Co.
Link-Belt Co.
Mechanical Handling Systems, Inc.
New York Belting & Packing Co.
Nichols Conveyor & Engineering Co.
Paramount Mfg. Co.
Raybestos-Manhattan, Inc., Manhattan Rubber Div.
United States Rubber Co.
Universal Hoist & Mfg. Co.
Jervis B. Webb Co. of Calif.
Weigh Right Automatic Scale Co.

ELEVATORS—bucket

Bodinson Mfg. Co.
Chain Belt Co.
J. D. Christian Engineers
Conveyor Co.
Day Co.
Fairfield Engineering Co.
Fetterman-Colfax Co.
Fort Worth Steel & Machinery Co.
Hapman Conveyors, Inc., Div. of Hapman-Dutton Co.
Hewitt-Robins, Inc.
Hurt Conveyor Co.
Jeffrey Mfg. Co.
Link-Belt Co.
Lippmann Engineering Works
Mechanical Handling Systems, Inc.
Nichols Conveyor & Engineering Co.
Noble Co.
Raybestos-Manhattan, Inc., Manhattan Rubber Div.
Screw Conveyor Corp.
Stephens-Adamson Mfg. Co.
Universal Hoist & Mfg. Co.
Jervis B. Webb Co. of Calif.
Weigh Right Automatic Scale Co.

ELEVATORS—continuous flow

E. W. Buschman Co.
J. D. Christian Engineers
Conveyor Co.
Fairfield Engineering Co.
Fetterman-Colfax Co.
Hapman Conveyors, Inc., Div. of Hapman-Dutton Co.
Jeffrey Mfg. Co.
Link-Belt Co.
Mechanical Handling Systems, Inc.
Paramount Mfg. Co.
Stephens-Adamson Mfg. Co.
Jervis B. Webb Co. of Calif.
West Bend Equipment Corp.

ELEVATORS—portable tiering

Barrett-Cravens Co.
Boman Co.
Colson Corp.
Economy Engineering Co.
Palmer-Shile Co.
Raymond Corp.
Revolvator Co.
Tubular Structures Corp. of America
West Bend Equipment Corp.

ELEVATORS—other

Barrett-Cravens Co.
J. D. Christian Engineers
Colby Steel & Mfg., Inc. (marine freight)
Flexoveyor Mfg. Co.
Humphrey Elevator Co. (manlift)
Nichols Conveyor & Engineering Co.
Power-Curve Conveyor Co.
Rotary Lift Co. (freight & passenger)
Sasgen Derrick Co.
Screw Conveyor Corp. (screw lift)
West Bend Equipment Corp. (freight)

GRABS

Cleveland Crane & Engineering Co.
Cullen-Friestedt Co.
Downs Crane & Hoist Co.
Hyster Co.
Iron Works, Inc.
Palmer-Shile Co.
Universal Cranehoist & Monorail Co.

GRAPPLES

Cyclops Iron Works
Downs Crane & Hoist Co.
Ederer Engineering Co.
Electric Steel Foundry Co.
Star Iron & Steel Co. (lumber)
Universal Cranehoist & Monorail Co.

HOISTS—air

Aro Equipment Co.
Cleveland Crane & Engineering Co.
Crane Hoist Engineering Corp.
CraneVeyor Corp.
Curtis Mfg. Co.
Engineering Products Co.
Joy Mfg. Co.
Keller Tool Div., Gardner-Denver Co.
Moffett Engineering Co.
Ohio Tramrail Div., The Forker Corp.
Sauerman Bros., Inc.
Thor Power Tool Co.
Universal Cranehoist & Monorail Co.

HOISTS—bucket

J. D. Christian Engineers
Crane Hoist Engineering Corp.
Cyclops Iron Works
Harnischfeger Corp.
Moffett Engineering Co.
Ohio Hoist & Mfg. Co.
Universal Cranehoist & Monorail Co.

HOISTS—chain

American Chain & Cable Co.
Boman Co.
Chester Hoist Div., National Screw & Mfg. Co.
Chisholm-Moore Hoist Div., Columbus McKinnon Chain Corp.
J. D. Christian Engineers
Cleveland Crane & Engineering Co.
Coffing Hoist Div., Duff Norton Co.
Crane Hoist Engineering Corp.
CraneVeyor Corp.
Cyclops Iron Works
Harnischfeger Corp.
Harrington Co.
Manning, Maxwell & Moore, Inc.
Moffett Engineering Co.
Ohio Hoist & Mfg. Co.
Ohio Tramrail Div., The Forker Corp.
Philadelphia Chain Block & Mfg. Co.
Republic Steel Corp.
Robbins & Myers, Inc., Hoist & Crane Div.
Universal Cranehoist & Monorail Co.
Yale & Towne Mfg. Co.

HOISTS—crane

American Hoist & Derrick Co.
Austin-Western Co.
Berger Engineering Co.
Cleveland Crane & Engineering Co.
Clyde Iron Works
Crane Hoist Engineering Corp.
CraneVeyor Corp.
Cyclops Iron Works
Downs Crane & Hoist Co.
Ederer Engineering Co.

Manning, Maxwell & Moore, Inc.
Moffett Engineering Co.
Ohio Hoist & Mfg. Co.
Ohio Tramrail Div., The Forker Corp.
Pacific Coast Engineering Co.
Robbins & Myers, Inc., Hoist & Crane Div.
Shepard Niles Crane & Hoist Corp.
Silent Hoist & Crane Co.
Universal Cranehoist & Monorail Co.
Yale & Towne Mfg. Co.

HOISTS—derrick

American Hoist & Derrick Co.
Berger Engineering Co.
Clyde Iron Works
Downs Crane & Hoist Co.
Manning, Maxwell & Moore, Inc.
Moffett Engineering Co.
Ohio Hoist & Mfg. Co.
Sasgen Derrick Co.
Shepard Niles Crane & Hoist Corp.
Skagit Steel & Iron Works

HOISTS—drum

American Hoist & Derrick Co.
Berger Engineering Co.
Big Joe Mfg. Co.
J. D. Christian Engineers
Cleveland Crane & Engineering Co.
Clyde Iron Works
Cyclops Iron Works
Downs Crane & Hoist Co.
Ederer Engineering Co.
Electrolift, Inc.
Manning, Maxwell & Moore, Inc.
Moffett Engineering Co.
Ohio Hoist & Mfg. Co.
Pacific Coast Engineering Co.
Robbins & Myers, Inc., Hoist & Crane Div.
Sasgen Derrick Co.
Sauerman Bros., Inc.
Silent Hoist & Crane Co.
Skagit Steel & Iron Works
Stephens-Adamson Mfg. Co.
Universal Cranehoist & Monorail Co.
Universal Hoist & Mfg. Co.

HOISTS—electric

American Chain & Cable Co.
American Engineering Co.
Barrett-Cravens Co.
Berger Engineering Co.
Big Joe Mfg. Co.
Chester Hoist Div., National Screw & Mfg. Co.
Chisholm-Moore Hoist Div., Columbus McKinnon Chain Corp.
J. D. Christian Engineers
Cleveland Crane & Engineering Co.
Clyde Iron Works
Coffing Hoist Div., Duff-Norton Co.
Colby Steel & Mfg., Inc.
Crane Hoist Engineering Corp.
CraneVeyor Corp.
Cyclops Iron Works
Downs Crane & Hoist Co.
Ederer Electric Co.
Electrolift, Inc.
Globe Hoist Co.
Harnischfeger Corp.
Harrington Co.
Joy Mfg. Co.
Manning, Maxwell & Moore, Inc.
Moffett Engineering Co.
Ohio Hoist & Mfg. Co.
Ohio Tramrail Div., The Forker Corp.
Pacific Coast Industrial Equipment Corp.
Republic Steel Corp.
Robbins & Myers, Inc., Hoist & Crane Div.
Sasgen Derrick Co.
Sauerman Bros., Inc.
Shepard Niles Crane & Hoist Corp.
Silent Hoist & Crane Co.
Skagit Steel & Iron Works
Stephens-Adamson Mfg. Co.
Unit Mfg. Co.
Universal Cranehoist & Monorail Co.
Universal Hoist & Mfg. Co.
Yale & Towne Mfg. Co.

HOISTS—gasoline

American Hoist & Derrick Co.
Austin-Western Co.
Berger Engineering Co.
Clyde Iron Works
Colby Steel & Mfg., Inc.
"HH" Manufacturers
Joy Mfg. Co.
Ohio Hoist & Mfg. Co.
Sasgen Derrick Co.
Sauerman Bros., Inc.
Silent Hoist & Crane Co.
Skagit Steel & Iron Works
Universal Hoist & Mfg. Co.

HOISTS—hand

American Chain & Cable Co.
Barrett-Cravens Co.
Big Joe Mfg. Co.
Chester Hoist Div., National Screw & Mfg. Co.
Chisholm-Moore Hoist Div., Columbus McKinnon Chain Corp.
Clyde Iron Works
Coffing Hoist Div., Duff-Norton Co.
Crane Hoist Engineering Corp.
CraneVeyor Corp.
Cyclops Iron Works
Griphoist, Inc.
Harnischfeger Corp.
Harrington Co.
Moffett Engineering Co.
Manning, Maxwell & Moore, Inc.
Ohio Hoist & Mfg. Co.
Ohio Tramrail Div., The Forker Corp.
Philadelphia Chain Block & Mfg. Co.
Robbins & Myers, Inc., Hoist & Crane Div.
Sasgen Derrick Co.
Skagit Steel & Iron Works
Stephens-Adamson Mfg. Co.
Universal Cranehoist & Monorail Co.
Yale & Towne Mfg. Co.

HOISTS—hydraulic

Austin-Western Co.
Beacon Machinery Inc.
Big Joe Mfg. Co.
Cleveland Crane & Engineering Co.
Curtis Mfg. Co.
Daybrook Hydraulic Div., L. A. Young Spring & Wire Corp.
Engineering Products Co.
Globe Hoist Co.
"HH" Manufacturers
Nichols Conveyor & Engineering Co.
Ohio Hoist & Mfg. Co.
Pacific Coast Engineering Co.
Rotary Lift Co.
Silent Hoist & Crane Co.
Unit Mfg. Co.

HOISTS—monorail

American Engineering Co.
American MonoRail Co.
Chester Hoist Div., National Screw & Mfg. Co.
Chisholm-Moore Hoist Div., Columbus McKinnon Chain Corp.
Cleveland Crane & Engineering Co.
Crane Hoist Engineering Corp.
CraneVeyor Corp.
Cyclops Iron Works
Ederer Engineering Co.
Electrolift, Inc.
Harnischfeger Corp.
Harrington Co.
Louden Machinery Co.
Manning, Maxwell & Moore, Inc.
Moffett Engineering Co.
Ohio Hoist & Mfg. Co.
Ohio Tramrail Div., The Forker Corp.
Richards-Wilcox Mfg. Co.
Robbins & Myers, Inc., Hoist & Crane Div.
Shepard Niles Crane & Hoist Corp.
Spanmaster Crane Div., Jervis B. Webb Co. of Calif.
Universal Cranehoist & Monorail Co.
Yale & Towne Mfg. Co.

HOISTS—portable

American Chain & Cable Co.
Austin-Western Co.
Clyde Iron Works
Coffing Hoist Div., Duff-Norton Co.
Crane Hoist Engineering Corp.
CraneVeyor Corp.
Electrolift, Inc.
Globe Hoist Co.
Griphoist, Inc.
Harnischfeger Corp.
"HH" Manufacturers
Joy Mfg. Co.
Manning, Maxwell & Moore, Inc.
Moffett Engineering Co.
Ohio Hoist & Mfg. Co.
Robbins & Myers, Inc., Hoist & Crane Div.
Silent Hoist & Crane Co.
Tubular Structures Corp. of America
Unit Mfg. Co.
Universal Cranehoist & Monorail Co.
Yale & Towne Mfg. Co.

HOISTS—skip

J. D. Christian Engineers
Clyde Iron Works
Colson Corp.
Downs Crane & Hoist Co.
Hewitt-Robins, Inc.
Jeffrey Mfg. Co.
Mathews Conveyor Co. West Coast
Moffett Engineering Co.
Ohio Hoist & Mfg. Co.
Pacific Coast Engineering Co.
Shepard Niles Crane & Hoist Corp.
Skagit Steel & Iron Works
Stephens-Adamson Mfg. Co.

HOISTS—traveling

American Chain & Cable Co.
Austin-Western Co.
Chester Hoist Div., National Screw & Mfg. Co.
Cleveland Crane & Engineering Co.
Crane Hoist Engineering Corp.
CraneVeyor Corp.
Cyclops Iron Works
Downs Crane & Hoist Co.
Ederer Engineering Co.
Electrolift, Inc.
Harnischfeger Corp.
Manning, Maxwell & Moore, Inc.
Moffett Engineering Co.
Ohio Hoist & Mfg. Co.
Ohio Tramrail Div., The Forker Corp.
Pacific Coast Engineering Co.
Robbins & Myers, Inc., Hoist & Crane Div.
Shepard Niles Crane & Hoist Corp.
Universal Cranehoist & Monorail Co.
Yale & Towne Mfg. Co.

HOISTS—other

CraneVeyor Corp.
Cyclops Iron Works
Downs Crane & Hoist Co.
Duct-O-Wire Co. (electrical crane and monorail conductor systems)
Electrolift, Inc.
Griphoist, Inc.
Mefco Sales & Service Corp. (controls)
Moffett Engineering Co.
Rotary Lift Co. (locomotive)
Shepard Niles Crane & Hoist Corp.
Skagit Steel & Iron Works (marine, industrial, logging)

JACKS—hydraulic

Beacon Machinery, Inc.
Buda Div., Allis Chalmers Mfg. Co.
Duff-Norton Co.
Globe Hoist Co.
Joyce Cridland Co. (hydraulic lifts)
Lewis-Shepard Products, Inc.
Market Forge Co.
Rotary Lift Co.
Templeton, Kenly & Co.

JACKS—lift

Buda Div., Allis Chalmers Mfg. Co.
Colson Corp.
Duff-Norton Co.
Ironbound Box & Lumber Co.
Joyce Cridland Co.
Market Forge Co.
Geo. M. Prescott Co.
Templeton, Kenly & Co.

JACKS—screw

Buda Div., Allis Chalmers Mfg. Co.
Duff-Norton Co.
Joyce Cridland Co.
Saginaw Products Corp.
Templeton, Kenly & Co.

LOADERS—portable, self-propelled

Allis-Chalmers Mfg. Co. (tractor shovels, bulidozers)
Arnolt Corp.
Austin-Western Co.
Brooks Equipment & Mfg. Co. (truck unit and container system)
Caterpillar Tractor Co.
J. D. Christian Engineers
Deere & Co.
Dempster Brothers, Inc. (truck unit and container system)
Drott Mfg. Co.
Eimco Corp.
Fetterman-Colfax Co.
Flexoveyor Mfg. Co.
Globe Hoist Co.
Frank G. Hough Co.
LeTourneau-Westinghouse Co.
Lippmann Engineering Works
Market Forge Co.
Moffett Engineering Co.
Oliver Corp.
Power-Curve Conveyor Co.
Thew Shovel Co. (shovels and attachments mounted on crawlers and rubber-tire carriers)
Tractomotive Corp.

LOADERS—tailgate

Anthony Co.
Daybrook Hydraulic Div., L. A. Young Spring & Wire Corp.
Marion Metal Products Co.

MAGNETS

Austin-Western Co.
Dings Magnetic Separator Co.
Electric Controller & Mfg. Co.
Eriez Mfg. Co.
Stearns Magnetic, Inc.
Universal Cranehoist & Monorail Co.

MARKING EQUIPMENT

W. H. Brady Co. (self sticking aisle markers, numbers and letters)
Industrial Marketing Equipment Co. (automatic)

PACKAGING MACHINERY

Inland Wire Products Co. (stitching machines)
Food Machinery & Chemical Corp., Packing Equipment Div. (nailing machines)

PACKING MATERIAL

Kimberly-Clark Corp. (cellulose cushioning)

PALLET LOADERS

Beacon Machinery, Inc.
J. W. Greer Co.

PALLETS

Auto Sheet Metal Works (steel)
Duff California Co.
Fab-Weld Corp.
Industrial Skid & Pallet Co.
Ironbound Box & Lumber Co.
Masonite Corp.
Multaframe of California, Inc.
Palmer-Shile Co.
Pittsburgh Steel Products Co.
Powell Pressed Steel Company (steel)
Republic Steel Corp.
Signode Steel Strapping Co.
Union Steel Products Co. (wire)

PLATFORMS—loading

Globe Hoist Co.
Industrial Skid & Pallet Co. (skid)
Joyce Cridland Co. (hydraulic)
Magline, Inc.
Powell Pressed Steel Co.
Roll Rite Corp.
Rotary Lift Co.
Wentworth & Irwin, Inc.

PULLEYS—conveyor

American Pulley Co.
A. J. Bayer Co.
R & J Dick Co.
J. D. Christian Engineers
Conveyor Co.
Dodge Mfg. Co.
Fetterman-Colfax Co.
Fort Worth Steel & Machinery Co.
Hewitt-Robins, Inc.
Hurt Conveyor Co.
Jeffrey Mfg. Co.
Link-Belt Co.
Lippmann Engineering Works
New London Engineering Co.
Washington Belting & Rubber Co.

PULLEYS—other

American Pulley Co.
Brown Rubber Co. (rubber lined)
J. D. Christian Engineers
Dings Magnetic Separator Co.
Dodge Mfg. Co.
Jeffrey Mfg. Co.
Reeves Pulley Co.

PUMPS – TRACTORS, monorail

J. E. Rhoads & Sons
Stearns Magnetic, Inc.
Yuba Mfg. Co. (internal driven)

PUMPS—materials handling

John Bean Div., Food Machinery & Chemical Corp.
Deming Co.
Fairbanks, Morse & Co.
Pacific Pumps, Inc.
Tuthill Pump Co.
Viking Pump Co.
Warren Steam Pump Co.

RACKS—pallet

American Sales Engineers
Auto Sheet Metal Works
Barrett-Cravens Co.
Butler Mfg. Co.
Equipment Engineering Services
Fab-Weld Corp.
Industrial Skid & Pallet Co.
Johnson & Flaherty Mfg. Co.
Lewis-Shepard Products, Inc.
Market Forge Co.
Mechanical Handling Systems, Inc.
Multaframe of California, Inc.
Noble Co.
Palmer-Shile Co.
The Powell Pressed Steel Company
Rack Engineering Co. of Calif.
Republic Steel Corp.
Roll Rite Corp.
Tube-Strut Div., Tubular Structures Corp. of America
Unistrut Products Co.
Wentworth & Irwin, Inc.
West Bend Equipment Corp.

RACKS—storage

American Sales Engineers
Auto Sheet Metal Works
Barrett-Cravens Co.
Equipment Engineering Services
Equipto Div., Aurora Equipment Co.
Fab-Weld Corp.
Industrial Skid & Pallet Co.
Johnson & Flaherty Mfg. Co.
Lewis-Shepard Products, Inc.
Lyon Metal Products, Inc.
Market Forge Co.
Mechanical Handling Systems, Inc.
Multaframe of California, Inc.
Noble Co.
Palmer-Shile Co.
Rack Engineering Co. of Calif.
Roll Rite Corp.
Tube-Strut Div., Tubular Structures Corp. of America
Unistrut Products Co.
Wentworth & Irwin, Inc.
West Bend Equipment Corp.
Worley & Co.

RACKS—other

American Sales Engineers
Barrett-Cravens Co.
Chas. Wm. Doepke Mfg. Co. (tote box)
Equipment Engineering Services
Hollaender Mfg. Co. (fittings for building racks)
Industrial Skid & Pallet Co.
Johnson & Flaherty Mfg. Co.
Lewis-Shepard Products, Inc.
Market Forge Co.
Mechanical Handling Systems, Inc.
Multaframe of California, Inc.
Noble Co.
Palmer-Shile Co.
Rack Engineering Co. of Calif.
Revolvator Co.
Roll Rite Corp.
Tube-Strut Div., Tubular Structures Corp. of America
Unistrut Products Co.
Wentworth & Irwin, Inc.

RAMPS—loading, etc.

Colby Steel & Mfg., Inc.
Fab-Weld Corp.
Globe Hoist Co.
Loomis Machine Co.
Magline, Inc.
Penco Engineering Co.
Roll Rite Corp.
Rotary Lift Co.
Wentworth & Irwin, Inc.

ROLLERS—conveyor

Barber-Greene Co.
A. J. Bayer Co.
John Bean Div., Food Machinery & Chemical Corp.
Boman Co.
E. W. Buschman Co.
J. D. Christian Engineers
Harry J. Ferguson Co.
Fetterman-Colfax Co.
Food Machinery and Chemical Corp., Packing Equipment Div.
Hurt Conveyor Co.
Link-Belt Co.
Lippmann Engineering Works
Magline, Inc.
Geo. M. Prescott Co.
Rapids Standard Co.
Saginaw Products Corp.
Thistle Roller & Mfg. Co.

ROLLERS—other

Boman Co.
J. D. Christian Engineers
Holz Tire & Rubber Co.
Thistle Roller & Mfg. Co.

SCALES—automatic

Conveyor Co.
W. C. Dillon & Co.
Exact Weight Scale Co.
Fairbanks, Morse & Co.
Howe Scale Co.
Noble Co.
Richardson Scale Co.
Toledo Scale Co.

SCALES—conveyor

Cleveland Crane & Engineering Co.
Conveyor Co.
Fairbanks, Morse & Co.
Howe Scale Co.
Martin-Decker Corp.
Richardson Scale Co.
Toledo Scale Co.

SCALES—counting

Exact Weight Scale Co.
Fairbanks, Morse & Co.
Howe Scale Co.
Toledo Scale Co.

SCALES—monorail

American MonoRail Co.
Cleveland Crane & Engineering Co.
Fairbanks, Morse & Co.
Howe Scale Co.
Ohio Tramrail Div., The Farlow Corp.
Toledo Scale Co.

SCALES—packaging

Exact Weight Scale Co.
Fairbanks, Morse & Co.
General Nailing Machine Corp.
Howe Scale Co.
Richardson Scale Co.
Toledo Scale Co.
Weigh Right Automatic Scale Co.

SCALES—portable

W. C. Dillon & Co.
Exact Weight Scale Co.
Fairbanks, Morse & Co.
General Nailing Machine Corp.
Howe Scale Co.
Hydroway Scales, Inc.
Martin-Decker Corp.
Richardson Scale Co.
Toledo Scale Co.

SCALES—warehouse

W. C. Dillon & Co.
Fairbanks, Morse & Co.
Howe Scale Co.
Toledo Scale Co.

SCALES—other

Exact Weight Scale Co.
Harnischfeger Corp. (crane scale)
Howe Scale Co.
Hydroway Scales, Inc. (crane)
Martin-Decker Corp. (lift-truck)
Toledo Scale Co. (motor truck)

SLINGS—belt

C. R. Daniels, Inc.
Downs Crane & Hoist Co.
Hewitt-Robins, Inc.
New York Belting & Packing Co.
Raybestos-Manhattan, Inc., Manhattan Rubber Div.
Republic Rubber Div., Lee Rubber & Tire Co.
Thermoid Co.

SLINGS—canvas

C. R. Daniels, Inc.
Downs Crane & Hoist Co.

SLINGS—chain

American Chain & Cable Co.
Campbell Chain Co.
Downs Crane & Hoist Co.
McKay Co.
Ohio Hoist & Mfg. Co.
Philadelphia Chain Block & Mfg. Co.
Republic Steel Corp.
Universal Cranehoist & Monorail Co.

SLINGS—rope

American Mfg. Co.
Downs Crane & Hoist Co.

SLINGS—wire rope

American Chain & Cable Co.
Bethlehem Pacific Coast Steel Co.
Broderick & Bascom Rope Co.
Colorado Fuel and Iron Corp.
Columbia-Geneva Steel Div., United States Steel Corp.
Downs Crane & Hoist Co.
E. H. Edwards Co.
Leschen Wire Rope Div., H. K. Porter Co.
Macwhyte Co.
Palmer-Shile Co.
John A. Roebling's Sons Corp.
Union Wire Rope Corp.
Universal Cranehoist & Monorail Co.
Upson-Walton Co. (swaged assemblies, fittings)

SLINGS—other

Brown-Line Corp. (webbing)
Downs Crane & Hoist Co.
Palmer-Shile Co.

STACKERS—portable electric

Barrett-Cravens Co.
Big Joe Mfg. Co.
Boman Co.
Colson Corp.
Economy Engineering Co.
Fetterman-Colfax Co.
Hamilton Tool Co.
Lewis-Shepard Products, Inc.
Market Forge Co.
Palmer-Shile Co.
Rapids Standard Co.
Raymond Corp.
Revolvator Co.
West Bend Equipment Corp.

STACKERS—portable hand

Barrett-Cravens Co.
Big Joe Mfg. Co.
Boman Co.
Colson Corp.
Economy Engineering Co.
Hamilton Tool Co.
Lewis-Shepard Products, Inc.
Market Forge Co.
Palmer-Shile Co.
Raymond Corp.
Revolvator Co.
West Bend Equipment Corp.

STRAPPING

Acme Steel Co.
A. J. Gerrard & Co.
Gerrard Steel Strapping Div., U. S. Steel Corp.
Inland Wire Products Co.
H. K. Porter Co. (cutters)
J. E. Rhoads & Sons
Signode Steel Strapping Co.
Stanley Steel Strapping Div., The Stanley Works

TABLES—conveying

A. J. Bayer Co.
John Bean Div., Food Machinery & Chemical Corp.
Fetterman-Colfax Co.
Hamilton Tool Co.
Hurt Conveyor Co.
Island Equipment Corp.
Link-Belt Co.
Paramount Mfg. Co.

TABLES—elevating

Colson Corp.
Economy Engineering Co.
Hamilton Tool Co.
Link-Belt Co.
Market Forge Co.
Palmer-Shile Co.
Rack Engineering Co. of Calif.
Raymond Corp.
Revolvator Co.
Rotary Lift Co.
West Bend Equipment Corp.

TABLES—portable

Auto Sheet Metal Works
Colson Corp.
Hamilton Tool Co.
Market Forge Co.
Palmer-Shile Co.

TABLES—other

Hamilton Tool Co.
Palmer-Shile Co.
Paramount Mfg. Co.

TAPE—packaging

A. J. Gerrard & Co. (pressure sensitive)
Nashua Package Sealing Div., Nashua Corp. (gummed, plain and printed manual and automatic dispensers)

TIRES—industrial truck and trailer

Boman Co.
Brown Rubber Co.
Fargo Rubber Corp.
B. F. Goodrich Co.
Holz Tire & Rubber Co.
Jakes Foundry Co.
Monarch Rubber Co.
Roll Rite Corp.
United States Rubber Co.

TONGS

Downs Crane & Hoist Co.
Magline, Inc.
Palmer-Shile Co.

TRACTORS—diesel

Allis-Chalmers Mfg. Co.
Buda Div., Allis-Chalmers Mfg. Co.
Caterpillar Tractor Co.
Elmco Corp.
Frank G. Hough Co.
LeTourneau-Westinghouse Co.
Towmotor Corp.
Tractomotive Corp.

TRACTORS—electric warehouse

Barrett-Cravens Co.
Elwell-Parker Electric Co.
Kalamazoo Mfg. Co.
Lift Trucks, Inc.
Market Forge Co.
Mercury Mfg. Co.
Moto-Truc Co.
Yale & Towne Mfg. Co.

TRACTORS—gasoline warehouse

Allis-Chalmers Mfg. Co.
Boman Co.
Buda Div., Allis-Chalmers Mfg. Co.
Deere & Co.
"HH" Manufacturers
Kalamazoo Mfg. Co.
Market Forge Co.
Mercury Mfg. Co.
Towmotor Corp.
Tractomotive Corp.

TRACTORS—monorail

American MonoRail Co.
Cleveland Crane & Engineering Co.
Oliver Corp.

TRAILERS—factory and warehouse

Boman Co.
Brown Trailers, Inc.
Colson Corp.
Fab-Weld Corp.
Fairbanks Co.
French & Hecht Div., Kelsey-Hayes Wheel Co.
Gar-Bro Mfg. Co.
"HH" Manufacturers
Jakes Foundry Co.
Lansing Co.
Market Forge Co.
Mercury Mfg. Co.
Nutting Truck & Caster Co.
Palmer-Shile Co.
Geo. M. Prescott Co.
Roll Rite Corp.
Saginaw Products Corp.
Selma Trailer & Mfg. Co.
Trailmobile, Inc.
United Mfg. Co.
Wentworth & Irwin, Inc.
West Bend Equipment Corp.

TRAILERS—motor truck and tractor

Brown Trailers, Inc.
F.A.B. Mfg. Co.
"HH" Manufacturers
C. E. Howard Corp. (stainless steel for hauling liquid products)
Marion Metal Products Co.
Trailmobile, Inc.
Wentworth & Irwin, Inc.

TROLLEYS

American MonoRail Co.
Chainveyor Corp. (combination power and free)
Chester Hoist Div., National Screw & Mfg. Co.
Chisholm-Moore Hoist Div., Columbus McKinnon Chain Corp.
Cleveland Crane & Engineering Co.
Coffing Hoist Div., Duff-Norton Co.
Crane Hoist Engineering Corp.
CraneVeyor Corp.
Cyclops Iron Works
Downs Crane & Hoist Co.
Ederer Engineering Co.
Feedrail Corp. (busway systems)
Harrington Co.
Keller Tool Div., Gardner-Denver Co.
Link-Belt Co.
Manning, Maxwell & Moore, Inc.
Moffett Engineering Co.
Ohio Hoist & Mfg. Co.
Ohio Tramrail Div., The Forker Corp.
Pacific Coast Industrial Equipment Corp.
Philadelphia Chain Block & Mfg. Co.
Richards-Wilcox Mfg. Co. (monorail)
Saginaw Products Corp.
Spanmaster Crane Div., Jervis B. Webb Co. of Calif.
Universal Cranehoist & Monorail Co.
Jervis B. Webb Co. of Calif.

TRUCKS—bag, barrel, drum

American Pulley Co.
Barrett-Cravens Co.
John Bean Div., Food Machinery & Chemical Corp.
Boman Co.
Buda Div., Allis-Chalmers Mfg. Co.
Colson Corp.
Economy Engineering Co.
Elwell-Parker Electric Co.
Fab-Weld Corp.
The Fairbanks Co.
Fetterman-Colfax Co.
Genesee Distributors
"HH" Manufacturers
Howe Scale Co.
Hyster Co.
Jakes Foundry Co.
Kalamazoo Mfg. Co.
Kwik-Mix Co.
Lansing Co.
Lewis-Shepard Products, Inc.
Magline, Inc.
Nutting Truck & Caster Co.
Palmer-Shile Co.
Roll Rite Corp.
Towmotor Corp.
Wellington Machine Co.
West Bend Equipment Corp.

TRUCKS—box type

Auto Sheet Metal Works
Horace Blackman Co.
Colson Corp.
Fab-Weld Corp.
Fetterman-Colfax Co.
Howe Scale Co.
Hyster Co.
Ironbound Box & Lumber Co.
Jakes Foundry Co.
Kwik-Mix Co.
Lansing Co.
G. B. Lewis Co. (Polyester)
Lewis-Shepard Products, Inc.
Market Forge Co.
National Vulcanized Fibre Co.
Nutting Truck & Caster Co.
Palmer-Shile Co.
Geo. M. Prescott Co.
Rack Engineering Co. of Calif.
Roll Rite Corp.
Towmotor Corp.
Wellington Machine Co.
West Bend Equipment Corp.

TRUCKS—die handling

Automatic Transportation Co.
Barrett-Cravens Co.
Colson Corp.
Economy Engineering Co.
Elwell-Parker Electric Co.
Fab-Weld Corp.
Hamilton Tool Co.
Hyster Co.
Jakes Foundry Co.
Lewis-Shepard Products, Inc.
Market Forge Co.
Nutting Truck & Caster Co.
Palmer-Shile Co.
Towmotor Corp.
Unit Mfg. Co.
Wellington Machine Co.
West Bend Equipment Corp.
Yale & Towne Mfg. Co.

TRUCKS—dolly

American Pulley Co.
Arnolt Corp.
Auto Sheet Metal Works
Colson Corp.
Engineering Products Co.
Fab-Weld Corp.
The Fairbanks Co.
Gar-Bro Mfg. Co.
Howe Scale Co.
Industrial Skid & Pallet Co.
Ironbound Box & Lumber Co.
Jakes Foundry Co.
Market Forge Co.
Mercury Mfg. Co.
National Vulcanized Fibre Co.
Nutting Truck & Caster Co.
Palmer-Shile Co.
Roll Rite Corp.
United Mfg. Co.
Wellington Machine Co.
Wentworth & Irwin, Inc. (house moving)
West Bend Equipment Corp.

TRUCKS—elevating or lifting

American Pulley Co.
Automatic Transportation Co.
Barrett-Cravens Co.
Boman Co.
Buda Div., Allis-Chalmers Mfg. Co.
Clark Equipment Co.
Colby Steel & Mfg. Co.
Colson Corp.
Economy Engineering Co.
Elwell-Parker Electric Co.
Fairbanks Co.
Hamilton Tool Co.
Hyster Co.
Kwik-Mix Co.
Lewis-Shepard Products, Inc.
Market Forge Co.
Palmer-Shile Co.
Raymond Corp.
Revolvator Co.
Towmotor Corp.
Wellington Machine Co.
West Bend Equipment Corp.
Yale & Towne Mfg. Co.

TRUCKS—factory and warehouse

American Pulley Co.
Automatic Transportation Co.
Barrett-Cravens Co.
Brown-Line Corp.
Buda Div., Allis-Chalmers Mfg. Co.
Colson Corp.
Elwell-Parker Electric Co.
Fab-Weld Corp.
Fairbanks Co.
French & Hecht Div., Kelsey-Hayes Wheel Co.
Gar-Bro Mfg. Co.
Howe Scale Co.
Hyster Co.
Industrial Skid & Pallet Co.
Ironbound Box & Lumber Co.
Jakes Foundry Co.
Kwik-Mix Co.
Lansing Co.
Lewis-Shepard Products, Inc.
Magnelux Co. (magnesium alloy)
Market Forge Co.
National Vulcanized Fibre Co.
Nutting Truck & Caster Co.
Pacific Coast Industrial Equipment Corp.
Palmer-Shile Co.
Roll Rite Corp.
Saginaw Products Corp.
Spaulding Fibre Co.
Towmotor Corp.
United Mfg. Co.
Wellington Machine Co.
West Bend Equipment Corp.
Yale & Towne Mfg. Co.

TRUCKS—fork, diesel

Baker-Raulang Co.
Barrett-Cravens Co.
Buda Div., Allis-Chalmers Mfg. Co.
Clark Equipment Co.
Gerlinger Carrier Co.
Hyster Co.
Towmotor Corp.
Yale & Towne Mfg. Co.

TRUCKS—fork, electric

Automatic Transportation Co.
Baker-Raulang Co.
Barrett-Cravens Co.
Big Joe Mfg. Co.
Boman Co.
Clark Equipment Co.
Colby Steel & Mfg. Co.
Economy Engineering Co.
Elwell-Parker Electric Co.
Engineering Products Co.
Lewis-Shepard Products, Inc.
Market Forge Co.
Mercury Mfg. Co.
Moto-True Co.
Ohio Hoist & Mfg. Co.
Raymond Corp.
Revolvator Co.
Yale & Towne Mfg. Co.

TRUCKS—fork, gasoline

Automatic Transportation Co.
Baker-Raulang Co.
Boman Co.
Buda Div., Allis-Chalmers Mfg. Co.
Clark Equipment Co.
Gerlinger Carrier Co.
"HH" Manufacturers
Hyster Co.
Kwik-Mix Co.
Market Forge Co.
Towmotor Corp.
Transitier Truck Co.
Yale & Towne Mfg. Co.

TRUCKS—hand

American Pulley Co.
Barrett-Cravens Co.
John Bean Div., Food Machinery & Chemical Corp.
Big Joe Mfg. Co.
Boman Co.
E. W. Buschman Co.
Colson Corp.
Engineering Products Co.
Equipto Div., Aurora Equipment Co.
Fab-Weld Corp.
Fairbanks Co.
Fetterman-Colfax Co.
Food Machinery and Chemical Corp., Packing Equipment Div.
French & Hecht Div., Kelsey-Hayes Wheel Co.
Gar-Bro Mfg. Co.
"HH" Manufacturers
Howe Scale Co.
Jakes Foundry Co.
Lansing Co.
Lewis-Shepard Products, Inc.
Magline, Inc.
Magnelux Co. (magnesium alloy)
Mercury Mfg. Co.
Nutting Truck & Caster Co.
Ohio Hoist & Mfg. Co.
Palmer-Shile Co.
Geo. M. Prescott Co.
Rapids Standard Co.
Roll Rite Corp.
Saginaw Products Corp.
Wellington Machine Co.
Wentworth & Irwin, Inc.
West Bend Equipment Corp.
Yale & Towne Mfg. Co.

TRUCKS—hand, motorized

Automatic Transportation Co.
Barrett-Cravens Co.
Big Joe Mfg. Co.
Boman Co.
Clark Equipment Co.
Gar-Bro Mfg. Co.
Kwik-Mix Co.
Lewis-Shepard Products, Inc.
Lift Trucks, Inc.
Moto-True Co.
Revolvator Co.
Towmotor Corp.
Yale & Towne Mfg. Co.

TRUCKS—industrial (electric, gas-electric, gasoline)

Autoette, Inc.
Automatic Transportation Co.
Barrett-Cravens Co.
Boman Co.
Buda Div., Allis-Chalmers Mfg. Co.
Clark Equipment Co.
Colby Steel & Mfg., Inc.
Economy Engineering Co.
Elwell-Parker Electric Co.
Engineering Products Co.
Kalamazoo Mfg. Co.
Kwik-Mix Co.
Lewis-Shepard Products, Inc.
Market Forge Co.
Mercury Mfg. Co.
Raymond Corp.
Revolvator Co.
Silent Hoist & Crane Co.
Taylor Mfg. Co.
Towmotor Corp.
Yale & Towne Mfg. Co.

TRUCKS—lift, gasoline

Automatic Transportation Co.
Boman Co.
Buda Div., Allis-Chalmers Mfg. Co.
Elwell-Parker Electric Co.
Gerlinger Carrier Co.
"HH" Manufacturers
Hyster Co.
Kwik-Mix Co.
Market Forge Co.
Silent Hoist & Crane Co.
Towmotor Corp.
Yale & Towne Mfg. Co.

TRUCKS—lift, hand

American Pulley Co.
Barrett-Cravens Co.
Big Joe Mfg. Co.
Boman Co.
Colson Corp.
Engineering Products Co.
Fab-Weld Corp.
Hamilton Tool Co.
Lewis-Shepard Products, Inc.
Lift Trucks, Inc.
Market Forge Co.
Ohio Hoist & Mfg. Co.
Raymond Corp.
Revolvator Co.
Unit Mfg. Co.
Wellington Machine Co.
West Bend Equipment Corp.
Yale & Towne Mfg. Co.

TRUCKS—lift, hand-electric

American Pulley Co.
Automatic Transportation Co.
Barrett-Cravens Co.
Big Joe Mfg. Co.
Colson Corp.
Hamilton Tool Co.
Lewis-Shepard Products, Inc.
Lift Trucks, Inc.
Market Forge Co.
Moto-True Co.
Ohio Hoist & Mfg. Co.
Raymond Corp.
Revolvator Co.
Screw Conveyor Corp.
Towmotor Corp.
Yale & Towne Mfg. Co.

TRUCKS—lift, hand-mechanical or jack-type

American Pulley Co.
Barrett-Cravens Co.

TRUCKS, lift, hydraulic — WORK POSITIONERS

Boman Co.
Colson Corp.
Hamilton Tool Co.
Lewis-Shepard Products, Inc.
Revolvator Co.
West Bend Equipment Corp.
Yale & Towne Mfg. Co.

TRUCKS—lift, hydraulic

American Pulley Co.
Barrett-Cravens Co.
Big Joe Mfg. Co.
Boman Co.
Brown-Line Corp.
Buda Div., Allis-Chalmers Mfg. Co.
Colson Corp.
Elwell-Parker Electric Co.
Engineering Products Co.
Gerlinger Carrier Co.
"HH" Manufacturers
Ironbound Box & Lumber Co.
Kwik-Mix Co.
Lewis-Shepard Products, Inc.
Lift Trucks, Inc.
Market Forge Co.
Ohio Hoist & Mfg. Co.
Raymond Corp.
Revolvator Co.
Screw Conveyor Corp.
Unit Mfg. Co.
West Bend Equipment Corp.
Yale & Towne Mfg. Co.

TRUCKS—lift, power-driven

Automatic Transportation Co.
Barrett-Cravens Co.
Boman Co.
Buda Div., Allis-Chalmers Mfg. Co.
Colby Steel & Mfg., Inc.
Elwell-Parker Electric Co.
"HH" Manufacturers
Kwik-Mix Co.
Lewis-Shepard Products, Inc.
Lift Trucks, Inc.
Market Forge Co.
Ohio Hoist & Mfg. Co.
Raymond Corp.
Revolvator Co.
Screw Conveyor Corp.
Yale & Towne Mfg. Co.

TRUCKS—packing house

Automatic Transportation Co.
Auto Sheet Metal Works
John Bean Div., Food Machinery & Chemical Corp.
Buda Div., Allis-Chalmers Mfg. Co.
Elwell-Parker Electric Co.
Fab-Weld Corp.
Food Machinery and Chemical Corp., Packing Equipment Div.
Howe Scale Co.
Hyster Co.
Jakes Foundry Co.
Kwik-Mix Co.
Lewis-Shepard Products, Inc.
Wellington Machine Co.

TRUCKS—pallet

Automatic Transportation Co.
Barrett-Cravens Co.
Boman Co.
Brown-Line Corp.
Buda Div., Allis-Chalmers Mfg. Co.
Colson Corp.
Engineering Products Co.
Fab-Weld Corp.
Hyster Co.
Kwik-Mix Co.
Lewis-Shepard Products, Inc.
Lift Trucks, Inc.
Market Forge Co.
Moto-True Co.
National Vulcanized Fibre Co.
Nutting Truck & Caster Co.
Ohio Hoist & Mfg. Co.
Geo. M. Prescott Co.
Raymond Corp.
Roll Rite Corp.
Towmotor Corp.
Unit Mfg. Co.
West Bend Equipment Corp.
Yale & Towne Mfg. Co.

TRUCKS—paper roll

Automatic Transportation Co.
Auto Sheet Metal Works
Barrett-Cravens Co.
Boman Co.
Buda Div., Allis-Chalmers Mfg. Co.
Clark Equipment Co.
Elwell-Parker Electric Co.
Fab-Weld Corp.
Fairbanks Co.
Howe Scale Co.
Hyster Co.
Ironbound Box & Lumber Co.
Jakes Foundry Co.
Lewis-Shepard Products, Inc.
Market Forge Co.
Nutting Truck & Caster Co.
Wellington Machine Co.
Yale & Towne Mfg. Co.

TRUCKS—sheet handling

Automatic Transportation Co.
Auto Sheet Metal Works
Barrett-Cravens Co.
Elwell-Parker Electric Co.
Fab-Weld Corp.
Hamilton Tool Co.
Howe Scale Co.
Hyster Co.
Jakes Foundry Co.
Lewis-Shepard Products, Inc.
Market Forge Co.
Nutting Truck & Caster Co.
Geo. M. Prescott Co.
Spaulding Fibre Co.
Towmotor Corp.
West Bend Equipment Corp.

TRUCKS—skid handling

Automatic Transportation Co.
Auto Sheet Metal Works
Barrett-Cravens Co.
Big Joe Mfg. Co.
Boman Co.
Brown-Line Corp.
Buda-Div., Allis-Chalmers Mfg. Co.
Elwell-Parker Electric Co.
Fab-Weld Corp.
Hamilton Tool Co.
Howe Scale Co.
Hyster Co.
Industrial Skid & Pallet Co.
Kwik-Mix Co.
Lewis-Shepard Products, Inc.
Lift Trucks, Inc.
Market Forge Co.
Moto-True Co.
Geo. M. Prescott Co.
Raymond Corp.
Revolvator Co.
Towmotor Corp.
West Bend Equipment Corp.
Yale & Towne Mfg. Co.

TRUCKS—straddle

Automotive Transportation Co.
Barrett-Cravens Co.
Big Joe Mfg. Co.
Buda Div., Allis-Chalmers Mfg. Co.
Clark Equipment Co.
Economy Engineering Co.
Gerlinger Carrier Co.
Hyster Co.
Lewis-Shepard Products, Inc.
Lift Trucks, Inc.
Market Forge Co.
Moto-True Co.
Raymond Corp.
Yale & Towne Mfg. Co.

TRUCKS—tiering, electric

American Pulley Co.
Automatic Transportation Co.
Barrett-Cravens Co.
Big Joe Mfg. Co.
Economy Engineering Co.
Elwell-Parker Electric Co.
Lewis-Shepard Products, Inc.
Lift Trucks, Inc.
Market Forge Co.
Mercury Mfg. Co.
Moto-True Co.
Raymond Corp.
Revolvator Co.
Yale & Towne Mfg. Co.

TRUCKS—other

Baker-Raulang Co. (side loading fork unit)
Barrett-Cravens Co.
Dempster Brothers, Inc. (truck unit and container system)
Elwell-Parker Electric Co.
Food Machinery and Chemical Corp., Packing Equipment Div. (bulk grain handling)
Iron Works, Inc. (attachment and devices for industrial trucks)
Jakes Foundry Co.
Kochring Co.
Lewis-Shepard Products, Inc.
Nutting Truck & Caster Co. (appliances, dis-handling, stair climbing, tow line)
Parkdale Co. (LP gas conversion equipment)
Roura Iron Works (self dumping hoppers for fork or platform trucks)
Screw Conveyor Corp. (truck lifts, hydraulic and electric)
Taylor Mfg. Co. (personnel)
Towmotor Corp.
United Mfg. Co.
Wellington Machine Co.

WHEELBARROWS—industrial

Jackson Mfg. Co.
Lansing Co.

WHEELS—conveyor

Albion Industries
American Pulley Co.
A. J. Bayer Co.
John Bean Div., Food Machinery & Chemical Corp.
Boman Co.
Conveyor Co.
Harry J. Ferguson Co.
Fetterman-Colfax Co.
Food Machinery and Chemical Corp., Packing Equipment Div.
Hurt Conveyor Co.
Link-Belt Co.
Mathews Conveyor Co. West Coast Mechanical Handling Systems, Inc.
Pacific Coast Industrial Equipment Corp.
Rapids Standard Co.
Richards-Wilcox Mfg. Co.
Saginaw Products Corp.
Speedways Conveyors, Inc.

WHEELS—general industrial

Aerol Co.
Albion Industries
Bassick Co.
Bronco Products Co.
Brown Rubber Co.
Colson Corp.
Darnell Corp.
Divine Brothers Co.
Fairbanks Co.
Fargo Rubber Corp.
French & Hecht Div., Kelsey-Hayes Wheel Co.
Gar-Bro Mfg. Co.
Jackson Mfg. Co.
Jakes Foundry Co.
Lewis-Shepard Products, Inc.
Pacific Coast Industrial Equipment Corp.
R & K Industrial Products Co.
Roll Rite Corp.
Saginaw Products Corp.
Thistle Roller & Mfg. Co.
United Mfg. Co.
Wellington Machine Co.

WHEELS—hand truck

Aerol Co.
Albion Industries
American Pulley Co.
Boman Co.
Bronco Products Co.
Brown Rubber Co.
Colson Corp.
Darnell Corp.
Divine Brothers Co.
Fairbanks Co.
Fargo Rubber Corp.
Food Machinery and Chemical Corp., Packing Equipment Div.
French & Hecht Div., Kelsey-Hayes Wheel Co.
Jakes Foundry Co.
Lansing Co.
Lewis-Shepard Products, Inc.
Nutting Truck & Caster Co.
R & K Industrial Products Co.
Rapids Standard Co.
Roll Rite Corp.
Saginaw Products Corp.
United Mfg. Co.
Wellington Machine Co.
West Bend Equipment Corp.

WHEELS—rubber tired

Aerol Co.
Albion Industries
Bassick Co.
Boman Co.
Bronco Products Co.
Brown Rubber Co.
Colson Corp.
Darnell Corp.
Divine Brothers Co.
Fairbanks Co.
Fargo Rubber Corp.
Faultless Caster Corp.
Food Machinery and Chemical Corp., Packing Equipment Div.
French & Hecht Div., Kelsey-Hayes Wheel Co.
Gar-Bro Mfg. Co.
Jackson Mfg. Co.
Jakes Foundry Co.
Lansing Co.
Lewis-Shepard Products, Inc.
Market Forge Co.
Nutting Truck & Caster Co.
R & K Industrial Products Co.
Rapids Standard Co.
Roll Rite Corp.
Saginaw Products Corp.
United Mfg. Co.
Wellington Machine Co.
West Bend Equipment Corp.

WHEELS—tractor

Aerol Co.
Albion Industries
Boman Co.
Brown Rubber Co.
French & Hecht Div., Kelsey-Hayes Wheel Co.
"HH" Manufacturers
Jakes Foundry Co.
Lewis-Shepard Products, Inc.
Saginaw Products Corp.
United Mfg. Co.

WHEELS—trailer

Aerol Co.
Albion Industries
Boman Co.
Bronco Products Co.
Brown Rubber Co.
Darnell Corp.
Divine Brothers Co.
Fairbanks Co.
French & Hecht Div., Kelsey-Hayes Wheel Co.
"HH" Manufacturers
Jakes Foundry Co.
Lansing Co.
Lewis-Shepard Products, Inc.
Mercury Mfg. Co.
Saginaw Products Corp.
United Mfg. Co.
Wellington Machine Co.

WINCHES AND WINDLASSES

Berger Engineering Co.
J. D. Christian Engineers
Clyde Iron Works
Downs Crane & Hoist Co.
Engineering Products Co.
Harrington Co.
Hyster Co.
LeTourneau-Westinghouse Co.
Link-Belt Co.
Little Giant Products, Inc.
Moffett Engineering Co.
Ohio Hoist & Mfg. Co.
Pacific Car & Foundry Co.
Robbins & Myers, Inc., Hoist & Crane Div.
Susgen Derrick Co.
Shepard Niles Crane & Hoist Corp.
Silent Hoist & Crane Co.
Skagit Steel & Iron Works
Stephens-Adamson Mfg. Co.
Tulsa Winch Div., Vickers, Inc.
Universal Craneholst & Monorail Co.
Universal Hoist & Mfg. Co.

WIRE ROPE

American Chain & Cable Co.
American Hoist & Derrick (wire rope clamps)
Bethlehem Pacific Coast Steel Corp.
Broderick & Bascom Rope Co.
Colorado Fuel and Iron Corp.
Columbia-Geneva Steel Div., United States Steel Corp.
E. H. Edwards Co.
Electric Steel Foundry Co.
Leschen Wire Rope Div., H. K. Porter Co.
LeTourneau-Westinghouse Co.
Macwhyte Co.
Pacific Wire Rope Co.
H. K. Porter Co. (cutters)
John A. Roebling's Sons Corp.
Sauerman Bros., Inc.
Union Wire Rope Corp.

WORK POSITIONERS

American Machine & Foundry Co.

If you're growlin' about replacement costs . . .

IT'S TIME TO SPECIFY MONARCH INDUSTRIAL SOLID TIRES

IF YOUR COMPANY HAS MONEY "TO BURN" . . . TURN THE PAGE. We are talking *only* to buyers who want to reduce solid tire replacement costs . . . with no sacrifice of performance or quality. That's our specialty. That's why Monarch gives you premium lift truck tires at standard prices.

Monarch pressed-on solids are manufactured from higher quality materials than *the best premium passenger car tires.* This is no idle claim! Our tires last longer because they actually are made better. It's as simple as that.

We can supply a complete range of types and sizes to meet every normal or special need.

If economy is your goal . . .
MONARCH IS YOUR TIRE!

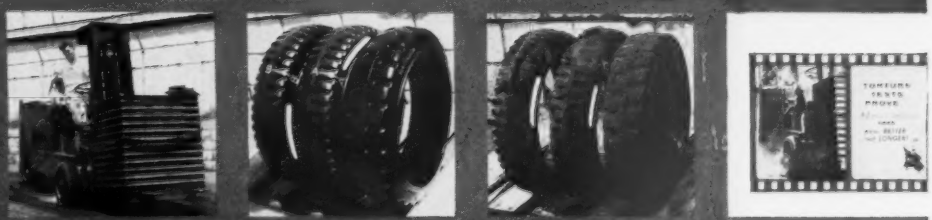


THE MONARCH RUBBER COMPANY

280 Lincoln Park • Hartville, Ohio
7-255 General Motors Bldg., Detroit 2, Mich.

6194-MR

TORTURE TESTS PROVE...



Engineered fatigue tests . . . on these standard tires . . . produced these results

For the complete story, write for Bulletin TD-200.

. . MONARCH Mono-Cushions® WEAR BETTER . . . LAST LONGER

For more details circle No. 261 on Reader Service Postcard
See Directory listing page 116, Yellow Section

ONE QUICK STROKE!
Your load's ready to ROLL . . .

with these Two New Weld-Bilt Time-Savers

NEW "PAL-BOY"
SINGLE STROKE MECHANICAL LIFT PALLET TRUCK

Amazingly easy to handle, lighter, smooth-rolling, new low-priced "Pal-Boy" is a great time-saver on single or double Pallet loads up to 2500 lbs. ONE swift handle-stroke lifts your load to rolling position. New ball bearing booster rollers on each fork simplify positioning under pallets. Has many new safety and load-saving features.



NEW "LO-BOY"
MECHANICAL SINGLE STROKE LIFT TRUCK

Built unusually low, designed for versatility, this easy-moving "LO-BOY" handles *single-faced* pallets as well as standard skids and loads, with "One-Stroke" lifting speed. Light weight, compact, strong, with Automatic Free Handle Release, Handle Safety Spring, Foot Pedal "Jar-Free" hydraulic lowering, and other features. For loads up to 2000 lbs.



WIRE or write for new bulletin and low prices on these new Weld-Bilt SINGLE STROKE time-savers.

SALES REPRESENTATIVES:
SAN FRANCISCO:
P. F. O'Donnell Co., 2298 Jerrold Ave.
SO. CALIFORNIA and ARIZONA:
Keville Industrial Service;
P.O. Box 1049, Pomona, Calif.
WASHINGTON and OREGON:
Hallidie Machine Co.
Seattle: 210 Hudson St.
Spokane: N. 2-605 Division St.
Tacoma: 200 Floral Bldg.
Portland: 1545 S. E. Union St.

WEST BEND EQUIPMENT CORPORATION
Materials Handling Engineers

307 Water Street, West Bend, Wisconsin
. . . for more details circle No. 102
See listing page 123, Yellow Section

Materials handling saves money . . .

Every bead counts

Enclosed conveyor protects catalyst beads

CATALYST beads used in oil refineries to crack oil and obtain a higher octane product are costly. To eliminate breakage and loss of the beads used at Richmond and El Segundo, Calif., refineries, the Standard Oil Co. of California is using two zipper conveyor elevators at each location.

The conveyors, manufactured by the Stephens-Adamson Co., are completely enclosed within the belt, which eliminates spillage or contamination. The Z-shaped conveyor is 14 ft. long on the horizontal feed section, travels 46 ft. in the vertical lift section, and is 32 ft. long on the upper horizontal section where the beads are dumped.

Automatically closed

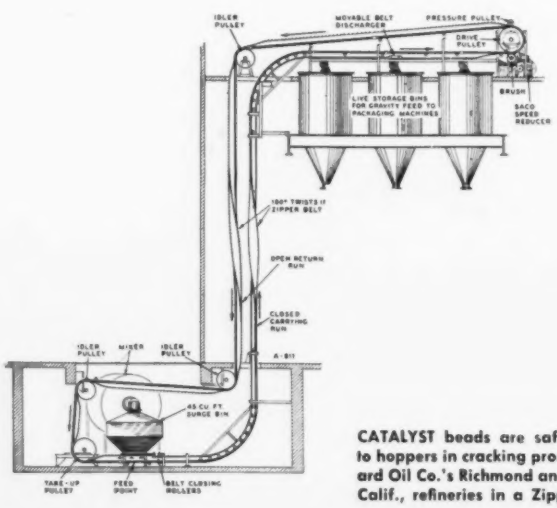
After receiving the beads from an overhead hopper, the zipper on the belt is automatically closed by two exterior rollers which force the teeth to mesh. The load is then elevated and passes over the horizontal discharge space.

Two rollers at the discharge position open the zipper, supplying beads to the reactors. Powered by a 3-hp. motor reducer and drive, the conveyors each have a capacity of ten tons.

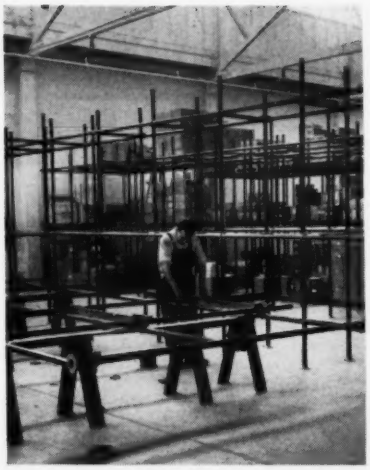




TOP diagram shows how zipper teeth are automatically opened and closed. Detail: (1) Normally spaced teeth on both sides of the belt; (2) Teeth spread to open the spaces between teeth; (3) Teeth locked and belt securely closed for conveying.



CATALYST beads are safely conveyed to hoppers in cracking process at Standard Oil Co.'s Richmond and El Segundo, Calif., refineries in a Zipper conveyor.



MAINTENANCE crew cuts pipe to the desired lengths to build its own pallet racks.

"DO IT YOURSELF" Good for pallet racks

LOS ANGELES County Purchasing and Stores Department have gone in for the "do it yourself" idea in building pallet racks. The result is considerable saving because the racks were built with pipe by their own maintenance crew.

Key to building such racks is the use of a malleable iron clamp for the ends of the tubing which is universal in application, requiring no rights or lefts. It has a gripping strength of 5,000 lb. and is supplied by the Tube Strut Division of the Tubular Structure Corp. of America.

The county found that racks built after this fashion could be adapted to any part of the department layout without any design problem, thus adding increased utilization.



PALLET racks in use show how the universal clamps are employed for making joints.

Announcing...

®TAPECOAT-X

The time-tested coal tar coating in tape form . . . now made with Xtra coating to give you these Xtra advantages



TAPECOAT-X comes in widths of 2", 3", 4" and 6". It is easy to apply and bonds readily to the surface with the flash of a torch. Wrapping is done spirally with only ½" overlap.

XTRA COAL TAR! Provides additional thickness of the same high quality coal tar that has distinguished TAPECOAT since 1941.

XTRA COVERAGE! Added coal tar thickness permits single wrap for same effective protection as present double-wrap method.

XTRA SAVINGS IN TIME AND LABOR! Faster application means lower labor cost.

XTRA SAVINGS IN MATERIAL! Single-wrapping with TAPECOAT-X requires less material, lowers cost.

XTRA CONVENIENCE! New type, self-disposing liner facilitates unrolling, speeds application, never gets in your way.

XTRA ECONOMY! TAPECOAT-X goes farther, gives you more value for your protection dollar.

Write today for the complete facts on this timely development for protecting pipe, pipe joints, mechanical couplings, tanks and other steel surfaces vulnerable to corrosion, above and below ground.

The TAPECOAT Company

ORIGINATORS OF COAL TAR COATING IN TAPE FORM

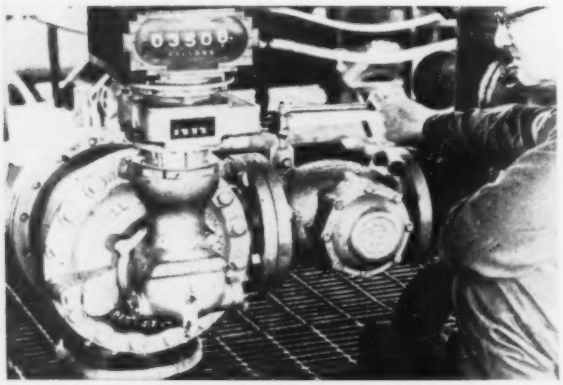
1563 Lyons St., Evanston, Illinois

. . . for more details circle No. 103 on Reader Service Postcard

NEW EQUIPMENT AND MATERIALS

USE RIP-OUT POSTCARD, page 149, for more information on products described.

ALL-BRONZE FLOW METERS
. . . protect against product contamination



New line of Rotocycle meters is specially designed for difficult services, where all-bronze construction will avoid product discoloration and contamination and resist corrosion. Flow rates range from 20 to 500 gpm. Accessories are available for shutting off large flows without hydraulic shock, centralized one-man metering control, and other services. Recommended for metering alcohols, brine, water, ketones, organic esters, some mild acids, some beverages, sugar solutions, and syrups. *Rockwell Mfg. Co.*

. . . For more details circle No. 150 on postcard.

BARREL FINISHING LINE
. . . in six models and sizes

Futurama series of precision barrel finishing equipment includes a deluxe model, designed for large work loads; a standard model; and an economy model. Each is available in two sizes: 36 x 32 in. or 24 x 24 in., either one or two compartment style. Line also includes a hot sawdust barrel for drying, polishing, and waxing—in deluxe, standard, and economy models. Some of the advantages claimed for Futurama line are the operator protection afforded by swing-away safety hood, absolute operator control of barrel through electronic control panel, reduced opening and closing time from cam locks and hinged door. Catalogs give details of new Futurama series. *Speed-D-Burr Corp.*

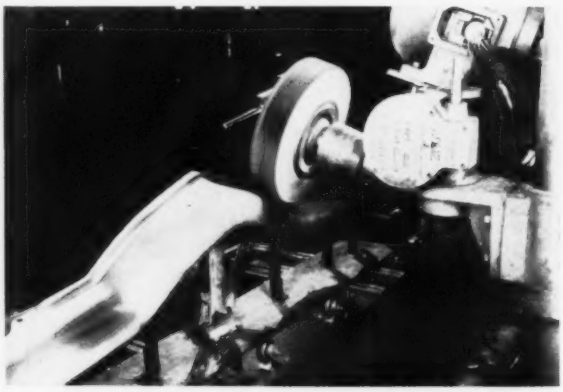
. . . For more details circle No. 151 on postcard.

CARBON BRUSHES
. . . resist silicone vapor

New carbon brushes are now available for use in totally enclosed DC motors and generators which use silicone resins for electrical insulation. Up to now, states manufacturer, silicone vapors released at high operating temperatures caused brushes to dust away rapidly, and carbon dust which collected in windings lowered the insulating value. New brushes, designated as Grade N-2 and N-6, have been successfully applied to a wide range of commutating requirements in totally enclosed, general purpose motors and generators having Class H (silicone) insulation. *National Carbon Co., Division of Union Carbide and Carbon Corp.*

. . . For more details circle No. 152 on postcard.

CONTOUR POLISHING WHEEL
. . . puts high finish on metals

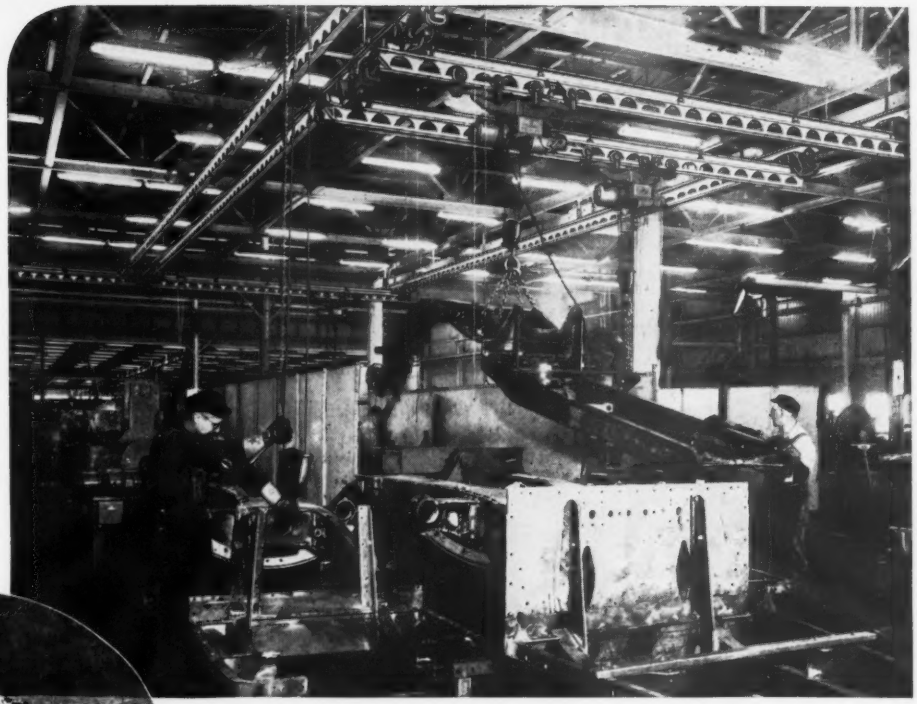


Here is an all-coated abrasive wheel capable of being shaped to a particular piece of work and holding that shape as it wears. Using abrasive cloth (Durite or Metalite) in grit range from 120 to 400, Kon-Toor wheel applies almost unbroken abrasive contact, in contrast to slapping action ordinarily found in polishing wheels. Wheel can be used on straight-line and rotary automatic polishing equipment or on semi-automatic fixtures. Designed for standard spindle mounting. *Behr-Manning Division of Norton Co.*

. . . For more details circle No. 153 on postcard.

IRA G. PERIN CO.
Material Handling Equipment
LOCAL STOCK & PARTS
SAN FRANCISCO 5
575 Howard Street
Phone GArfield 1-1827
SERVICE • • • SURVEYS

. . . for more details circle No. 104 on Reader Service Postcard



A hand-propelled interlocking crane system with two-ton electric hoists makes the handling of heavy parts easy in the Motor Grader Frame Assembly Section, Peoria, Illinois, Plant.

Caterpillar Diesel No. 12 Motor Grader in action.



EXTENSIVE TRAMRAIL INSTALLATIONS SERVE TWO GIANT CATERPILLAR TRACTOR CO. PLANTS

Peoria Plant Alone Has $1,000,000 Installation

SINCE the first small initial order for Cleveland Tramrail was placed by Caterpillar Tractor Co. over a quarter of a century ago, their installation has grown steadily until now in the vast Peoria Plant alone there is considerably more than one million dollars' worth in operation.

A large part of the job in building tractors, motor graders, diesel engines, etc., is handling materials. It is calculated that 20 tons of handling is required for each ton of tractors or diesel engines shipped from the plant. Saving a few minutes on each ton handled, amounts to a tremendous overall figure and resultant dollar savings.

Because of changes brought about by rapid plant growth, new models, or adoption of more advanced methods, for which Caterpillar is noted, it is often necessary to dismantle and re-erect Tramrail equipment. The ease with which this can be done with Cleveland Tramrail has proven to be especially advantageous to Caterpillar. Equipment serving one area can be taken down and installed in another area for use on an entirely different handling operation in very little time and usually without interfering with production.

Like Caterpillar, your plant, whether large or small, most likely can profit with Cleveland Tramrail.



GET THIS BOOK!

BOOKLET No. 2008. Packed with valuable information. Profusely illustrated. Write for free copy

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
8879 East 284th Street Wickliffe, Ohio

CLEVELAND TRAMRAIL
OVERHEAD MATERIALS HANDLING EQUIPMENT

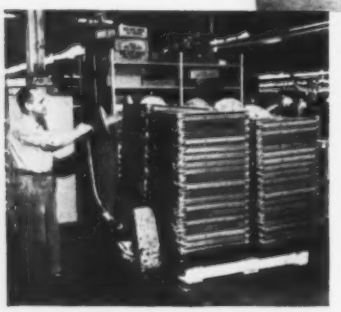
For more details circle No. 105 on Reader Service Postcard
See Directory listing page 106, Yellow Section

ELECTRONICS MANUFACTURER AND KENNETT TEAM UP TO CUT COSTS, SPEED WORK, SAVE SPACE

General Electric Company uses Kennett trays for safe, efficient transfer of sub-assemblies from their Auburn, New York plant to their Syracuse plant. Compact trays replace heavy trucks which cluttered valuable work areas and aisle space. Operator places components in individualized compartments, trays are stacked, removed by fork truck and shipped.



Kennett Receptacles filled with sub-assemblies are arranged so operator can remove part, make assembly, and place completed job in receptacles on his right. Trays are then switched to other stations. Because of the toughness and resiliency of National Vulcanized Fibre, the manufacturer now has receptacles built for years of hard service and maximum protection for work in process.



Trays permit storage of maximum number in minimum space. The engineered design of Kennett Receptacles allows them to nest snugly and stack easily for handy transport. Pallet loads shown here are ready to be shipped for refilling at sub-assembly plant. Kennett Receptacles can be designed to suit specific needs.

Kennett Receptacles are available in a wide variety of sizes, shapes and designs. The system to fit your needs can be recommended by your nearby Kennett Materials-Handling Specialist. Ask for his name and phone number when you request your free copy of our Catalog 54.



NATIONAL

VULCANIZED FIBRE CO.

San Francisco • 273 Seventh Street
Los Angeles • 2325 E. 8th Street
Seattle • 4001 Whitman Avenue

Please send by return mail, without obligation

☐ New, free Handling Equipment Manual (Catalog WI)

☐ Name and phone number of nearest Kennett Engineer

NAME_____ TITLE_____

COMPANY_____

STREET_____

CITY_____ ZONE_____ STATE_____

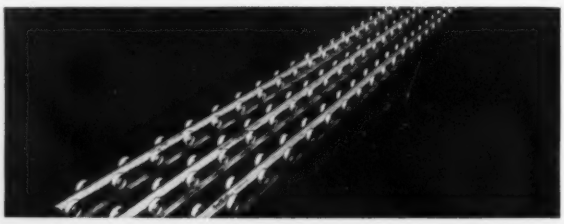
. . . for more details circle No. 106 on Reader Service Postcard

See Directory listing page 117, Yellow Section

NEW EQUIPMENT

. . . Begins on page 136

WHEEL CONVEYOR
. . . live rails are spaced to suit your needs



A-F live rail conveyor system can be mounted on portable stands for temporary set-ups or battened down in permanent installations. Conveyor consists of individual rails, spaced according to weight and size of load. Ball bearing wheels are welded to rail member, either four or eight wheels per foot, depending upon capacity required. Rails are available individually or in pre-assembled conveyor sections. *Alvey-Ferguson Co.*

. . . For more details circle No. 154 on postcard.

DIP TANK MAGNET
. . . no more barehanded "fishing" in tanks

The Octopus is a new magnetic tool for removing metal parts, tools, and particles from the bottom of plating tanks, hydraulic system oil reservoirs, acid baths, ovens, and hard-to-get-at containers. Three stainless steel tubes, mounted on non-magnetic runners, will lift and hold metal objects weighing 75 to 100 lb. Tool weighs only 9½ lb., and has removable 8-ft. handle. Non-electric. *Eriez Manufacturing Co.*



. . . For more details circle No. 155 on postcard.

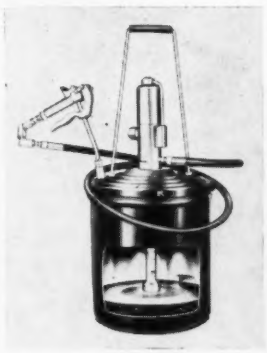
FIRE DETECTORS
. . . "electronic watchmen"

New Wheelco Flame-otrol systems draw on latest engineering know-how for their design. The "1400" Series CR system uses flame rectification principle. The "1500" Series IR makes use of a lead sulphide photoconductive cell responsive to infra-red as a detection element. All models are housed in cabinets and incorporate a plug-in type chassis, which has convenient external test points for checking circuits (illustrated at right). New Flame-otrol models use conventional industrial type sensing systems. *Wheelco Instrument Division, Barber-Colman Co.*



. . . For more details circle No. 156 on postcard.

PORTABLE POWER GUN
. . . pumps direct from lubricant pail



Model 711-H is claimed to be versatile enough to power-lubricate any machine in automotive, farm, or industrial use. It can deliver up to 14½ oz. of lubricant per minute, pumping right out of original 25- or 35-lb. pails, which eliminates transfer and loading operations. Unit weighs 12½ lb. *Alemite Division, Stewart-Warner Corp.*

. . . For more details circle No. 157 on postcard.

SHUTTLE-CAR CABLE
. . . tough inside as well as out

Improvements in new Security-flex cable include high-grade, heat-resistant neoprene insulating compound, which guards against puncture, crushing, and cutting. Neoprene cable jacket adds protection and flame resistance. Other features are nylon breaker strip to prevent short circuits, and improved stranding of grounding conductor for longer life. *Anaconda Wire and Cable Co.*

. . . For more details circle No. 158 on postcard.

POWER SCREWDRIVER
. . . built-in control of fastener tightness



Magnamatic series of portable power screwdivers and nutrunners use a new type of magnetic clutch for precise control of fastener tightness, regardless of operator skill. Designed for high-speed industrial applications, screwdriver's "one-shot" clutch instantly disengages when proper torque is reached. Thirteen models. *Chicago Pneumatic Tool Co.*

. . . For more details circle No. 159 on postcard.

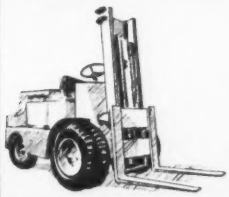
CARBIDE BLANKS
. . . now in stock for all machining needs



New line of throw-away blanks, both precision and utility, come in three different shapes, nine basic sizes, covering operations from finishing to roughing. Basic sizes are being made available off-the-shelf in different thicknesses. Blanks are ready for use on standard mechanical tool holders. *Carboloy Department of General Electric Co.*

. . . For more details circle No. 160 on postcard.

HOW TO OPERATE YOUR LIFT TRUCK at LOWER COST



1 BUY STANDARD REPLACEMENT PARTS AT DISCOUNT PRICES



THE BOMAN CO. offers fork lift parts at substantial discounts from factory prices. Volume operation permits big savings on all popular makes.

2 DON'T WAIT FOR PARTS



THE BOMAN CO. has the part you need on hand. Our complete stock — **THE LARGEST IN THE WEST** — saves valuable time in putting your trucks back to work.

3 SAVE DOWNTIME WITH OUR ENGINE EXCHANGE PLAN



With **BOMAN'S** engine exchange plan, you don't have to wait for repairs. Get back to work with a Boman completely rebuilt engine that features Perfect Circle 2-in-1 chrome rings. All engines carry new engine guarantee.

For immediate parts service, call ANgelus 3-2116

THE Boman COMPANY

3316 East Olympic Boulevard, Los Angeles 23, California
LARGEST SUPPLIER OF MATERIAL HANDLING EQUIPMENT IN THE WEST

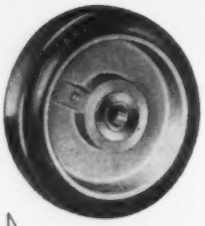
. . . for more details circle No. 107 on Reader Service Postcard
See Directory listing page 104, Yellow Section

designed for every need
built for longer service

BRONCO
INDUSTRIAL WHEELS

"with the tire that won't roll off"

General purpose, special service, spoke or disc type... no matter what your needs Bronco Industrial Wheels are designed to meet your requirements. Only with Bronco do you get tough, lightweight, aluminum construction with rubber tires molded on by Bronco's exclusive bonding process.







BRONCO
magnesium
BRIDGE RAMPS

Easy to handle Bronco carloading or truck ramps will speed up loading and reduce handling costs. The exclusive "Underside Design" of Bronco ramps provides greater strength, longer life, minimum weight and a low initial cost.

Write today for your illustrated brochure on Bronco Industrial Wheels or Bronco Ramps

BRONCO PRODUCTS CO. 717 Stanford Ave., Los Angeles 21, Calif.

...for more details circle No. 108 on Reader Service Postcard
See Directory listing page 104, Yellow Section

Use REMA to add years of life to your Belts



REMA is the New and Amazing Self-Vulcanizing Rubber Repair Material

REMA REQUIRES
- NO HEAT
- NO HEAVY EQUIPMENT
- NO CURING TIME DELAY

▼ REMA is not just another cold patch. REMA is vulcanization by chemical process. No heat or heavy vulcanizing equipment required. Here's the astonishing advantage — *when repair work is completed belts may be returned to service immediately.*

▼ REMA seals out moisture, reduces mildew, rot and deterioration — the great enemies of conveyor belts. Your own maintenance man can quickly repair your belts.

▼ Available in introductory kits or parts separately.

Order from your Flexco-Alligator distributor. Write for Folder No. R4

FLEXIBLE STEEL LACING CO., 4642 Lexington Street, Chicago 44, Illinois

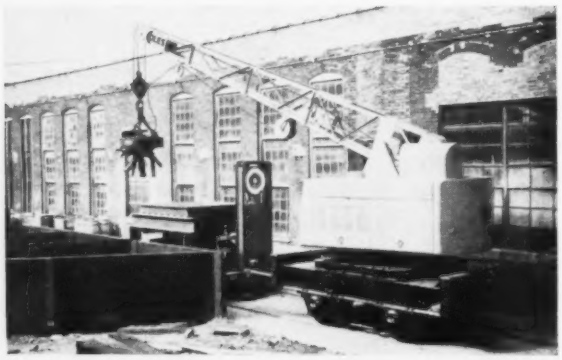
REMA SELF-VULCANIZING RUBBER REPAIR MATERIALS

...for more details circle No. 109 on Reader Service Postcard
See Directory listing page 110, Yellow Section

NEW EQUIPMENT

. . . Begins on page 136

RAIL-MOUNTED CRANE
. . . lifts and positions with hair-line accuracy



Coles cranes are available in varying boom lengths, equipped for magnet or bucket or hook operation. Reversible steering allows crane to move either forward or backward regardless of boom's position. Shown here is new Coles crane with magnet attachment recently installed at an Eastern foundry, designed to lift 7 tons at a 10-ft. radius, powered by a gasoline engine. Literature describes other applications. *Coles Cranes, Inc.*

. . . For more details circle No. 161 on postcard.

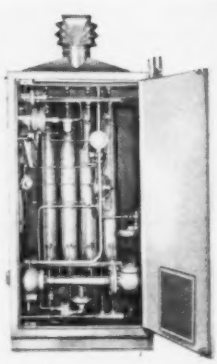
MACHINE AUTOMATION
. . . extends to preparing control tapes

Here is first commercially available system for electronic preparation of machine-control magnetic tapes directly from numerical data—the Giddings and Lewis Numericord system. New system was recently demonstrated in company's Wisconsin plant on aircraft-type spar and skin milling machines. It is also offered on horizontal boring, drilling, and milling machines, planer-type millers, and vertical boring mills. Technical data describing this first application of completely automatic control to heavy-duty machines is available from company. *Giddings and Lewis Machine Tool Co.*

. . . For more details circle No. 162 on postcard.

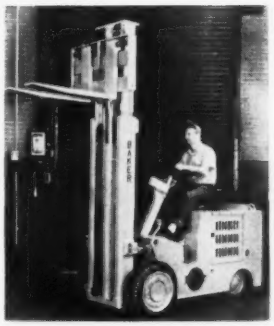
LP-GAS PLANT
. . . needs no outside source of power

New line of Algas LP-gas equipment is made up of self-contained, fully automatic, packaged units—vaporizers, vaporizer - mixers (shown here), and mixers only—for use by industries and utilities. Gas supplied can substitute for, or mix with, natural or manufactured gas. Power failures do not affect operation, because units are self-contained and direct-fired. Weatherproof steel cases permit installation in open. Bulletin GP-150 gives details. *American Liquid Gas Corp.*



. . . For more details circle No. 163 on postcard.

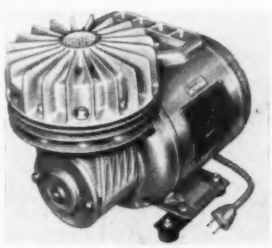
FORK TRUCK
. . . built to "balanced design"



New 6,000-lb. fork truck is added to Baker-Raulang's FG line, which features power units built to special balance specifications. Model FG-60 has heavy duty 6-cylinder engine, 144-in. maximum lift, short turning radius, and top full-load travel speed of 7 mph. at 1,900 rpm. *Baker-Raulang Co.*

. . . For more details circle No. 164 on postcard.

PORTABLE AIR COMPRESSOR
. . . steps in where piped air is not available



Model 100 is a compact, self-contained portable electric air compressor for powering pneumatic equipment. Delivers up to 100 psi. pressure and 3.5 cfm. free air. Sealed ball bearings, used throughout, require no lubrication. Unit comes with built-in intake filter and 1/3 hp. motor. *Modernair Corp.*

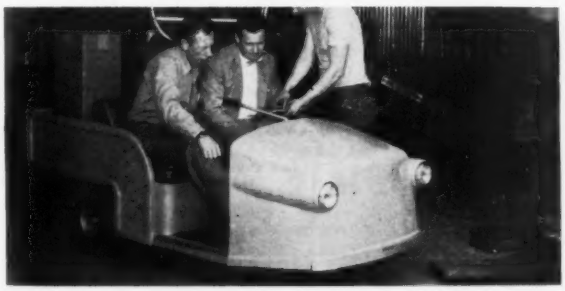
. . . For more details circle No. 165 on postcard.

TOGGLE CLAMPS
. . . add red plastic handle grips

Safety-Ease handle grips are now standard equipment on almost all models of DE-STA-CO toggle clamps, to lessen worker fatigue and provide greater safety and comfort for operators' hands. *Detroit Stamping Co.*

. . . For more details circle No. 166 on postcard.

UTILITY RUNABOUT
. . . gets you around plant faster, cheaper



Electric-powered personnel carrier and utility runabout is designed expressly for plant liaison work, reducing amount of time plant executives need for getting around plant. Powered by a 1½-hp. motor connected to automotive type differential, unit has a 3-v. electric system with 170-amp. hr. batteries made especially for Taylorcar. Cost of operation? Three cents a day to recharge the batteries. Capacity: 2 passengers and 500-lb. cargo on rear deck, or 4 passengers. *Taylor Mfg. Co.*

. . . For more details circle No. 167 on postcard.

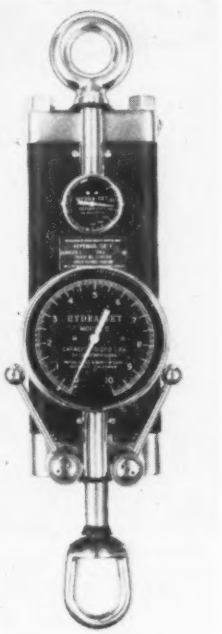
AMAZING VERSATILITY IN PRECISION CRANE CONTROL

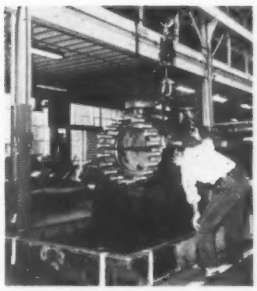
with Mefco's

HYDRA-SET

INSTRUMENT OF NECESSITY!

CONTROLS LOAD
ELIMINATES JOCKEYING
WEIGHS LOAD
INDICATES STRAIN
PREVENTS DAMAGE
SAVES MONEY
OBTAINS MICRO-TOLERANCES
SPEEDS SETTINGS
REDUCES LABOR
AVOIDS DELAYS
ELIMINATES SIGNAL ERRORS





The HYDRA-SET is shown controlling the precision placement of the casing of a high pressure boiler feed pump, weighing 8,000 lbs. (Courtesy Pacific Pumps.

SENSITIZES RAISING AND LOWERING OF LOADS TO WITHIN ONE-THOUSANDTH OF AN INCH PRECISION CONTROL

HYDRA-SET is a hydraulically-operated instrument for precise control of load hoisting or lowering operations. It is installed as a link between the crane hook and the load, is entirely self-contained, needs no air or outside lines to operate. The unit will raise or lower loads up to 20-tons a distance of 12 inches, with accuracy to within 1/1000 of an inch. It operates independently of the crane or hoist system and places control in the hands of an operator having visual contact with the parts being assembled or disassembled. There's a place for HYDRA-SET in your materials or machinery handling system!

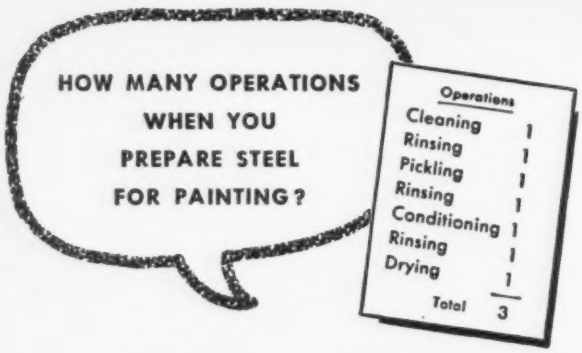
A product of **MEFCO** Send for complete data.

SALES & SERVICE CORP.

1509 Gardena Ave. Glendale 4, Calif. Phone: CHapman 5-3186

. . . for more details circle No. 110 on Reader Service Postcard

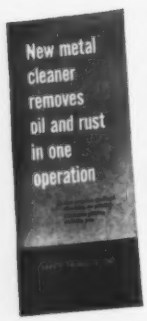
See Directory listing page 116. Yellow Section



What's wrong with that addition? How can seven operations add up to three?

It's easy when Oakite Composition No. 33 removes rust or heat scale *at the same time* it removes oil *at the same time* it prepares steel for lasting paint adhesion.

By combining cleaning, pickling and paint conditioning into one operation—and eliminating two rinses—you save the time, tanks and solution for four operations.



FREE For booklet describing the Oakite Composition No. 33 process, write to Oakite Products, Inc., 1001 E. First St., Los Angeles, or 681 Market St., San Francisco, Calif.

SPECIALIZED INDUSTRIAL CLEANING
OAKITE
MATERIALS · METHODS · SERVICE

Technical Service Representatives in Principal Cities of U. S. and Canada

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PETE MILLER

Manufacturers' Representative

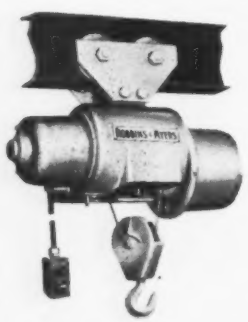
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ELECTRIC HOISTS AND CRANES

Serving

Southern California, Nevada, Arizona, Utah



Large inventories ranging from 500 lbs. to 20,000 lbs. carried in stock for immediate deliveries.

Electrical and Mechanical Repair Service Available

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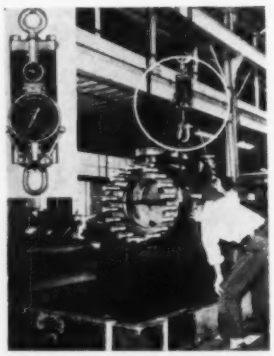
LOgan 5-2616 or LOgan 5-6941

7810 Salt Lake Ave. Huntington Park, Calif.

. . . for more details circle No. 112 on Reader Service Postcard

HOIST CONTROL

. . . doubles as a crane scale or strain gage



Hydra-Set operates as a link between hoisting mechanism and load, to give precision control of load descent or ascent, independent of crane or hoist control system. It requires no special installation and assures greater safety to both personnel and equipment. Instrument also serves as a crane scale, weighing load at the instant it is suspended, and under known load weight conditions can be used as a strain gage. Standard models up to 20-ton capacities. *Mefco Sales and Service Corp.*

. . . For more details circle No. 168 on postcard.

PORTABLE HOIST

. . . towed as a unit, without disassembly



Tusky platform hoist is towed to the job by car or pickup and can be put in place, ready to use, by one man in two or three minutes, states manufacturer. Hoist will handle 1,200 lb. unloading at 20 ft. in its basic, free standing position. Extra sections can be added for unloading at heights up to 100 ft. Automatic controls stop hoist at pre-set level. Bulletin gives operating details. *Tubular Structures Corp. of America.*

. . . For more details circle No. 169 on postcard.

CHAIN HOISTS & TROLLEYS

Large Inventories
For Immediate Delivery

LO 5-6941 SPARE PARTS LO 5-2616

AND

REPAIR SERVICE AVAILABLE

PETE MILLER

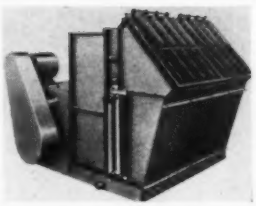
Manufacturer's Representative For

PHILADELPHIA CHAIN BLOCK & MFG. CO.

7810 Salt Lake Ave., Huntington Park, Calif.

. . for more details circle No. 113 on Reader Service Postcard

AIR CONDITIONERS
. . . here's a new line



Three basic types of central-station, cabinet-type air conditioners are in this new line offered by American Blower Corp.: (1) air conditioning units, for summer cooling and winter heating, (2) sprayed coil conditioner units, recommended for maintaining high humidity conditions, and (3) multi-zone conditioner units. Shown at right is Type AB multi-zone conditioner, which can be arranged for either vertical or horizontal air flow. Manual or automatic controls for temperature, multi-zone, or ventilation control. *American Blower Corp.*

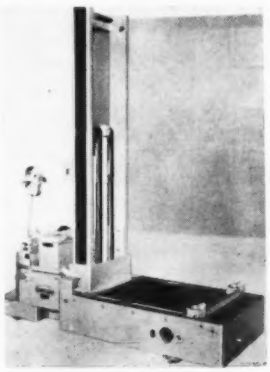
. . . For more details circle No. 170 on postcard.

WORM REDUCER
. . . in a wide range of horsepowers

This self-contained, compact right angle worm gear reducer is available in wide range of horsepowers, covering reduction ratios from 3⅝ to 1, to 90 to 1. There are no couplings to buy and no motor alignment required, states manufacturer, and unit may be mounted alongside equipment rather than in aisles. *Philadelphia Gear Works, Inc.*

. . . For more details circle No. 171 on postcard.

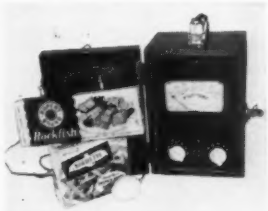
DIE HANDLER
. . . maneuvers safely in narrow aisles



Three new standardized die-handling units are added to Automatic electric-powered Transtacker line, in capacities of 3,000, 4,000, and 6,000 lb. Short platform lengths are the result of placing die-handling mechanism beneath platform, which has removable cover for servicing. Company states that largest unit, carrying 48x48-in. die, can make a right-angle turn in 90-in. aisles. *Automatic Transportation Co.*

. . . For more details circle No. 172 on postcard.

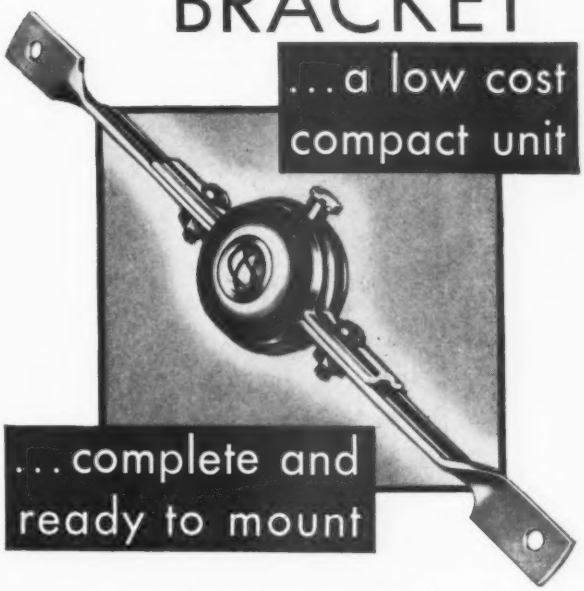
INDUSTRIAL THERMOMETER
. . . developed for use in low temperature field



New research instrument gives readings to within .05 deg. F. in temperature measurement of liquids, solids, or air. Multiple probes permit instantaneous measurements from several points. Self-powered and compact, unit with carrying case weighs 4 lb. Some of its uses are in studying techniques for freezing foods, testing storage temperatures, measuring temperature gradient in materials. *Kahl Scientific Instrument Corp.*

. . . For more details circle No. 173 on postcard.

NEW Randall BEARING BRACKET



A sturdy, compact, 10-gauge steel bracket bearing, furnished completely assembled ready to mount, or knocked down, as desired. It features the RANDALL "Deep Well" graphited ball assembly contained in a spherical rubber cushion to assure maximum absorption of vibration, quiet operation, and constant controlled self-alignment.

This bracket retains all the outstanding qualities that the name RANDALL implies —sturdy, low cost, quiet operation, easy installation, constant self-alignment, double lubrication, and long life. Furnished in standard shaft sizes, ⅝", ¾", 15/16", and 1" inclusive. Shaft sizes ½", 13/16" and ⅞" can be furnished on special orders in production quantities.

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ALLEN P. JAMES CO., San Francisco, Calif.
BROWN BEARING CO., Seattle, Washington

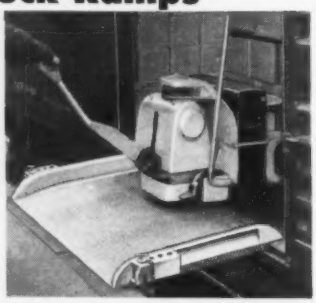
BRONZE BAR STOCK · BRONZE BUSHINGS · PILLOW BLOCKS · SHEET LUBRICATOR
Randall
GRAPHITED BEARINGS · THRUST WASHERS · SAFETY COLLARS · BRONZE CASTING

RANDALL GRAPHITE BEARINGS, INC.
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. . . *for more details circle No. 114 on Reader Service Postcard*

Lower Loading Dock Costs with PENCO Light Weight Magnesium Car Loading and Truck Ramps

MODERN SIMPLIFIED DESIGN
Scientifically Engineered

ALL WELDED STURDY CONSTRUCTION
Built like a bridge, heavy Side & Center Trusses



- One Man Operation
- Safety Side Rails
- Safety Curb Ends
- Saves Tires & Equipment
- Safety tread: non-skidding
- Full range locking device
- Full length hand grips
- Saves man power; reduces accidents; speeds-up all dock operations

Made from Light Weight Magnesium, thousands of Penco Ramps are in use throughout America. There is a Penco style and size (any capacity) for either car-loading or truck-loading docks, ready for instant use without installation expense. Send for descriptive literature—get all the facts on the many exclusive and superior features available only in Penco Ramps. Also Steel Ramps.

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go to a specialist *for bearings and accessories*

AMERICAN ROLLER BEARING COMPANY
Heavy Duty Journal Roller and Needle Bearings
THE BAKER COMPANY
Small Bearing Handling Tools; Bearing Torque Testers; Controlled Atmosphere Work Cabinets.
BEARING LOCKNUT & MACHINE COMPANY
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Miniature Ball Bearings for Precision Instruments.
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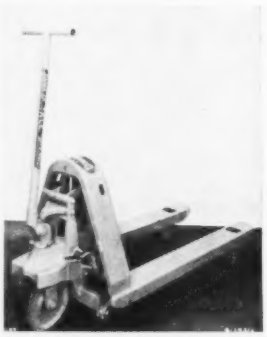
...for more details circle No. 116 on Reader Service Postcard

NEW EQUIPMENT

. . . Begins on page 136

HAND TRUCK
. . . modified for speed with light loads

New model of Yale and Towne's H20P hand truck is built to take loads up to 1,000 lb. and has faster lifting speed, with 4-in. hydraulic lift reached by only three lifting strokes. It is recommended for use by piece rate worker handling light loads, on either single or double faced pallets. *Yale & Towne Mfg. Co.*



. . . For more details circle No. 174 on postcard.

RUST PREVENTIVE
. . . new chemical treatment

New product manufactured by Wilbur and Williams Co. embodies a substance called "Ferratom" which is said to react chemically with surface of all ferrous metals to stop rust. It can be overcoated with any type of paint for further protection. Coverage ranges from 1,000 to 1,200 sq. ft. per gal., and application can be made by spraying, dipping, or brushing. *Wilbur & Williams Co.*

. . . For more details circle No. 175 on postcard.

TRACTOR-SHOVEL
. . . adds speed through no-clutch "power shift"

Model H O Payloader, with 2 cu. yd. capacity, is third and largest 4-wheel-drive tractor-shovel in this line. Like other two, it has pry-out bucket action, 40 deg. of breakout at ground level, new stability standards. Model HO, in addition, uses newly developed "power shift" which, manufacturer states permits shifting in all speed ranges, forward and reverse, without slowing or stopping. *Frank G. Hough Co.*



. . . For more details circle No. 176 on postcard.

SULPHURIC ACID
for the west
66° BAUME 20%
98% OLEUM
and special grades

Garfield CHEMICAL & MFG. CORP.
ESTABLISHED 1916
700 PACIFIC NAT'L BLDG. SALT LAKE CITY, UTAH

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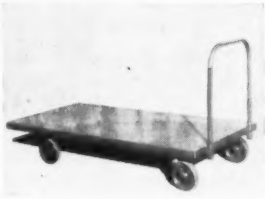
CONVEYOR STAND
. . . for mounting gravity and power conveyors



New type support stand, called Rapistand, is now used for permanent installations of Rapistan conveying equipment. Steel legs telescope for height adjustment and are secured by four serrated nuts. Available in variety of widths, with capacities from 2,000 to 4,000 lb. per stand. *Rapids-Standard Co., Inc.*

. . . For more details circle No. 177 on postcard.

HAND TRUCK
. . . can also be used with towline conveyor



Light-duty hand truck, Model A209MD, has 1,500-lb. capacity, with standard deck size of 32x72 in., 12 in. high. Rubber tires have a steel base backing for easy replacement. Towline attachments are available for both overhead and underfloor conveyor lines. *Mercury Manufacturing Co.*

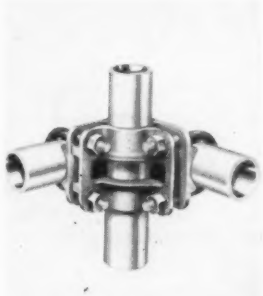
. . . For more details circle No. 178 on postcard.

VIBRATING SCREEN
. . . handles wet or dry feeds

Aero-Vibe screen (Model AVS) introduces simplified two-bearing design with counterweight wheels, for screening a wide variety of materials—sand, gravel, ores, coal, food products, chemicals, and even stream pollution reduction. Available in suspended or floor mounted models, with one, two, or three decks. Construction features of Aero-Vibe screen are described in a 12-page bulletin which also gives pointers on how to pick the right screen. *Allis-Chalmers Mfg. Co.*

. . . For more details circle No. 179 on postcard.

TUBULAR STRUCTURE CLAMP
. . . standard unit handles all connections



Unskilled crews can build tubular structures with Tube-Strut universally variable coupler, which, used singly or in combinations of two or three, effects tube-joints, intersections, diagonals, and other multiple connections. Structural rigidity provided by clamp eliminates need for extra bracing. Available in five sizes. *Tube-Strut Division, Tubular Structures Corp. of America.*

. . . For more details circle No. 180 on postcard.

BELT New building-block design builds profits for you with low-cost conveyor systems

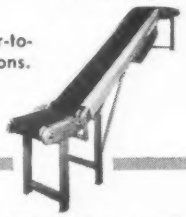


SERIES S12A VERSA-VEYOR
Light, low-cost, for moderate loads. Ideal for over stairways. Aluminum frame 11', 13' and 15' lengths.



SERIES T VERSA-VEYOR
Versatile, easily modified for any sorting, assembly job. 12" or 18" wide belts; aluminum or enameled steel frames. Various lengths.

SERIES F VERSA-VEYOR
Adapts easily to floor-to-floor handling situations. 12" or 18" wide belts. Aluminum or enameled steel.



Never before such versatility in low-cost handling equipment! "Building-Block Design" means *standard, interchangeable parts* . . . Belt conveyors quickly adapt to special jobs and changing production needs. Extreme portability, rugged construction, tireless power. Many work-saving accessories available. Get the facts on cost-cutting multi-purpose Belt conveyors. Send coupon today for illustrated catalog.

Manufactured by the Belt Corporation, Orient, Ohio

Keville Industrial Service
P.O. Box 1049, Pomona, California

Send me complete Belt Conveyor catalog, showing models, capacities, accessories and applications.

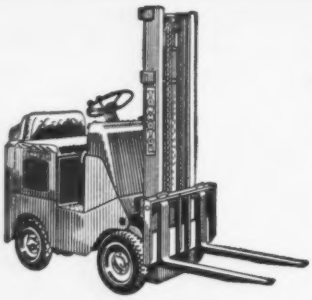
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ADDRESS

CITY

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WRIGHT * ELECTROLIFT
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AMPCO * KING
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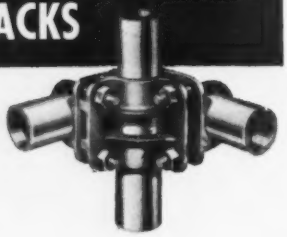
BRONCO * RITE HITE KING
BRIDGE RAMPS & DOCK BOARDS

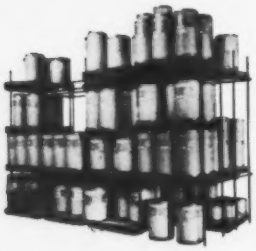
IRVING G. KING & CO.
LOS ANGELES • SAN DIEGO

...for more details circle No. 119 on Reader Service Postcard

YES! You CAN build your own STORAGE RACKS

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TUBE STRUT
CLAMPS

A strong and economical rack with TUBE-STRUT clamps and your own pipe. Write for details.

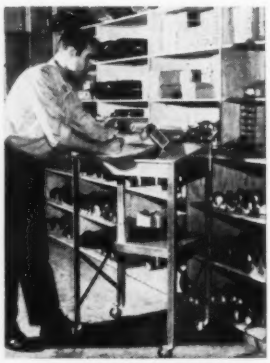
TUBE-STRUT DIVISION
TUBULAR STRUCTURES CORP. OF AMERICA
3129 RIVERSIDE DRIVE
LOS ANGELES 27, CALIFORNIA

...for more details circle No. 120 on Reader Service Postcard
See Directory listing page 122, Yellow Section

NEW EQUIPMENT

. . . Begins on page 136

ORDER DESK
. . . rolls where it's needed



Aluminum mobile desk weighs 29 lb. and rolls easily on rubber-tired swivel casters so it can be moved from one department to another in a plant, office, or warehouse for easy dispatch of paper work. Provides ample storage space. *Hamerslag Equipment Co.*

. . . For more details circle No. 181 on postcard.

BANDING TOOLS
. . . now come with built-in shears

Two new tools for speeding up car banding, the hand-operated tightener (Types FNS and GNS) and electric car banding tool (Type ECLS), now have built-in shears which cut strapping close to the seal. Separate cutting tool and separate cutting operation are eliminated through this improvement. Hand-operated Type FNS takes ¾-in. bands and Type GNS 1¼-in. bands. Electric tool takes either size bands. *The Stanley Works.*

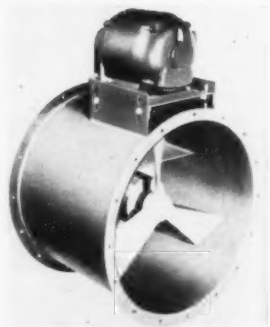
. . . For more details circle No. 182 on postcard.

FLOW REGULATOR
. . . for air, water, oil, or gas

Adjustable flow regulator, which weighs 4 oz., is designed primarily for regulating volume of air fluid flowing from line to tool in pneumatic tools, paint spray guns, or other devices. It can also be used as a shut-off valve. Regulator is attached directly to supply line, and flow control is provided by rotation of outside knurled sleeve. Some of the advantages claimed by manufacturer: no projecting knobs, no valve seats subject to leakage, no place for dirt to lodge. *Burklyn Co.*

. . . For more details circle No. 183 on postcard.

VENTILATING FANS
. . . new developments in tubeaxial design

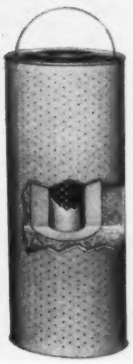


New line of belt-driven tubeaxial fans, Propellair Type BT, are recommended by manufacturer for handling corrosive exhaust, high temperature, explosive fumes, and similar applications. Propellers are cast from special aluminum-magnesium alloy, with high tensile and shock strength and increased resistance to corrosion. Available in five sizes. *Robbins & Myers, Inc.*

. . . For more details circle No. 184 on postcard.

OIL FILTER CARTRIDGE

. . . double acting, with two filter materials



New depth-type filter cartridge, called Kleer-Pac, can be used in place of bulk-type refills and comes in nine sizes. Cartridge contains layers of Kimpak cellulose material wound around center tube, and cotton waste tightly spun to assure uniform packing. Perforated metal case has a bail for easy handling. Recommended for engine lube oils, hydraulic oils, turbine oils, quench oils, and cutting oils. *Houdaille-Hershey of Indiana, Inc.*

. . . For more details circle No. 185 on postcard.

TRAYS

. . . for organized movement of materials

Lightweight vulcanized fiber trays are recommended for use in safe, orderly transfer of subassemblies from one plant to another. Components can be placed in proper compartments, trays stacked, and stacks removed by fork truck for shipping. Kennett trays, tote boxes, barrels, baskets, and trucks are fabricated from durable vulcanized fiber. *National Vulcanized Fibre Co.*

. . . For more details circle No. 186 on postcard.

ATMOSPHERE GENERATOR

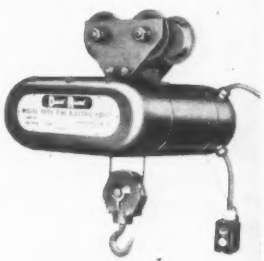
. . . low-cost atmosphere for heat treating

New Atmo-Gen unit has enclosed in a steel cabinet all the equipment necessary to produce a prepared atmosphere for bright hardening, dry cyaniding, copper and silver brazing, nitriding, and sintering. Type AM-300 unit supplies 300 cu. ft. per hour. In operation, ammonia gas passes through a flowmeter and then through a heated catalyst-filled retort, which causes a breakdown into 75% hydrogen and 25% nitrogen. Bulletin gives schematic flow diagram and equipment specifications. *Hevi Duty Electric Co.*

. . . For more details circle No. 187 on postcard.

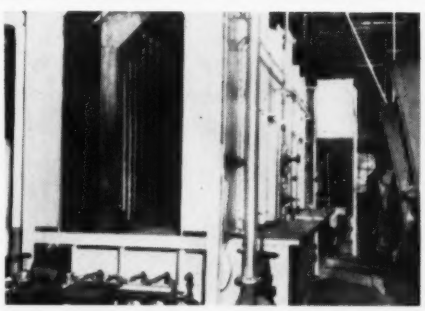
ELECTRIC CABLE HOIST

. . . lifts at speeds up to 25 fpm.



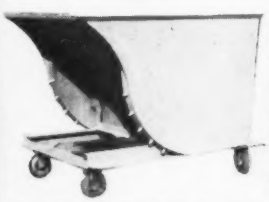
Compact design of this enclosed cable hoist (Model 55) gives close headroom for electric hoist construction. Push-button controlled, with 110 v. at box. Gears are permanently lubricated. Capacities, ¼, ½, and 1 ton models. *T. H. Round.*

. . . For more details circle No. 188 on postcard.

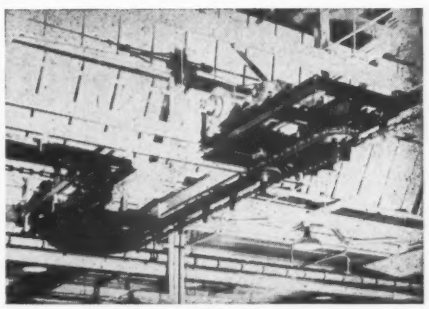


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Dump Hoppers made in ½ cu. yd. to 2 cu. yd. capacity—arranged for Fork Lift Handling or with Casters for towing.



Typical caterpillar drive for overhead monorail conveyor with dynamatic drive, automatic take-up. Our conveyor design and erection comparable to best standards.

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(Using Power Systems)
Complete and *Systems*
METAL FINISHING & PROCESSING
(Spray or Still Tank Conveyors)

Also Dump Hoppers, Special Fabricated Items Such as Production Trucks, Conveyor Workholders, Etc.

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• SOME OF OUR LARGER INSTALLATIONS NOW IN OPERATION

Los Angeles Plant	CHRYSLER MOTORS
Los Angeles & Santa Ana Plants	U. S. RUBBER CO.
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See Directory listing page 118, Yellow Section

Rapistan®

MATERIALS HANDLING EQUIPMENT

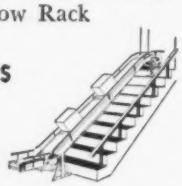


GRAVITY CONVEYORS

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- Aluminum & Steel
- Flow Rack

POWER CONVEYORS

- Permanent Belt
- Portable Belt
- Overhead Chain





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Cold-forged & Steel-forged

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SEATTLE Air-Mac, Inc. of Washington, MU 3388,
3838 4th Ave., S., Seattle 4, Washington

PORTLAND Air-Mac, Inc. of Oregon, Elmore 6524,
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. . . for more details circle No. 122 on Reader Service Postcard
See Directory listing page 118, Yellow Section

TEMPORARY TOOLING

Specialized Small Irregular Shaped Parts



- ☒ STAMPED
- ☒ FORMED
- ☒ PIERCED
- ☒ EXTRUDED
- ☒ STENCILLED
- ☒ TAPPED
- ☒ COUNTERSUNK

Years of tooling experience, combined with modern machines has proven over the past 20 years that the temporary die method is the most economical for model work and small production runs.

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THE WESTERN STATES

SHORT RUN Stamping Co.
2231 CHICO STREET
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(A Suburb of Los Angeles)

Send prints for firm quotation and detailed cost comparison.

MAIL PRINTS TODAY!
or Call
CUmberland 3-4109

STAMPINGS in SMALL LOTS

. . . for more details circle No. 123 on Reader Service Postcard

NEW EQUIPMENT

. . . Begins on page 136

SELF-POWERED HACK SAW
. . . can be used in close quarters

Self-contained Key-Hak unit with pistol-grip handle has easy maneuverability, with good control when making cuts in any direction. Even 360-deg. cuts can be made without changing hand positioning. Self-powered and portable, saw is designed for heavy duty work in almost any material, including stainless steel, tempered aluminum, Transite, and mild steel. Weighs 6¾ lb. Measures 15½ in. overall. *Key-Hak Division, Producers and Distributors, Inc.*

. . . For more details circle No. 189 on postcard.

DRAGLINE CART
. . . longer service from improved design

New Lewis-Shepard in-floor dragline cart boasts several improvements: (1) Rubber shock absorber in dragline pin guide removes all strain from pin as it is raised and dropped into dragline track. (2) Center part of deck is built of replaceable hardwood. (3) Tubular end rack is removable to reduce shipping costs. Also available as 4-wheel manual truck or with overhead dragline attachment. *Lewis-Shepard Products, Inc.*

. . . For more details circle No. 190 on postcard.

LIFT TRUCKS
. . . add new automatic drive for smooth power

Hystamatic drive is now offered for Hyster 3,000-lb. capacity UC-30 and 4,000-lb. YC-40 lift trucks. Smooth flow of power is said to eliminate engine lugging, increasing maneuverability and therefore work output. Design includes clutch, which can be partially engaged for reduction in traveling speed while retaining fast lifting speed. Specifications are given in Form 1130. *Hyster Co.*

. . . For more details circle No. 191 on postcard.

TIE WIRE
. . . packaged for safety and economy in use

Cal-Tie wire, recommended for heavy tying jobs such as reinforcing bars, comes in coils for use in a lightweight reel dispenser which is attached with belt fittings, leaving worker's hands free for tying, carrying, or holding. This form of packaging speeds up tying and eliminates kinked or tangled wire. Both annealed and galvanized wire is available in gages 14 through 20. *Wickwire Spencer Steel Division, Colorado Fuel and Iron Corp.*

. . . For more details circle No. 192 on postcard.

MATERIAL HANDLING EQUIPMENT

Forklift—Rentals—Repairs—Sales

PALLETS—BOXES—EXPORT CRATING AND LUMBER SALES



1550 WEST ESTHER STREET
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. . . for more details circle No. 124 on Reader Service Postcard

GET DATA AND LITERATURE YOU NEED

*Key numbers accompany all new equipment announcements, new literature reviews and products and services advertised in this issue. For data and literature you want, circle corresponding key numbers on card, sign, and drop it in the mail today—***WESTERN INDUSTRY** *will have the material sent directly to you promptly and without obligation.*

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16	36	56	76	96	116	136	158	176	196	216	236	256	276	296
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18	38	58	78	98	118	138	158	178	198	218	238	258	278	298
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COMPANY_____

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Make use of *Western Industry's* special service for readers. These business reply cards provide a quick, easy way to obtain full details on products and services described or advertised in this issue.

In addition, *Western Industry* will provide you with special help in locating sources of information concerning unusual plant operational problems you may have. Write and describe your problem briefly. *Western Industry* is particularly equipped to help you in the fields of:

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- Materials handling
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10	30	50	70	90	110	130	150	170	190	210	230	250	270	290
11	31	51	71	91	111	131	151	171	191	211	231	251	271	291
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16	36	56	76	96	116	136	156	176	196	216	236	256	276	296
17	37	57	77	97	117	137	157	177	197	217	237	257	277	297
18	38	58	78	98	118	138	158	178	198	218	238	258	278	298
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HELPFUL LITERATURE

FOR THE WESTERN PLANT OPERATOR who wants to keep informed.

Materials handling equipment

Palmer-Shile line of materials handling equipment, which includes skid boxes, stacking boxes, storage bins, racks, box trailers, pallets, skids, dump boxes, reels and stands, carts, and hand trucks is described in a new 42-page catalog. Order numbers and specifications are included. *Palmer-Shile Co.*

. . . For your copy circle No. 193

All about gears

A 76-page manual contains illustrations, diagrams, definitions, tables, charts, and explanations regarding all types of gears. A simplified method of calculating horsepower ratings of all type gearings has been included. *Philadelphia Gear Works, Inc.* G-655

. . . For your copy circle No. 194

End dumping attachment

Hydraulically operated attachment designed for automatic dumping of skid boxes or racks and for use with low-lift platform trucks is detailed in a new truck engineering bulletin. With this attachment, lift trucks can be used in the conventional manner and can speed bulk handling operations. *The Elwell-Parker Electric Co.*

. . . For your copy circle No. 195

Plugs and receptacles

A new 12-page bulletin, No. B59, illustrates and describes a line of electrical plugs and receptacles for power connecting requirements. Full specifications are included. *Joy Manufacturing Co.*

. . . For your copy circle No. 196

Globe valves

The major stainless steel globe valves in the Cooper Alloy line are described and illustrated in a new bulletin. In addition to schematic drawings of the various valves, the booklet includes a section on design factors and a table of major stainless alloys with their designations and applications. *Cooper Alloy Corp.* 55A

. . . For your copy circle No. 197

Materials handling job study



How an Idaho frozen food plant eliminated wasted manhours and interruptions in the flow of materials from receiving through processing by the use of three fork lift trucks is illustrated and explained in a new job study report. A before and after breakdown presents the details of the operation and the savings gained. *Towmotor Corp.* 147

. . . For your copy circle No. 198

Silicone defoamers

Properties and performance of silicone defoamers with special attention given to a special foam killer, Antifoam AF Emulsion, are described in new brochure. Suggested concentrations, dispersing media, and application methods are included. *Dow Corning Corp.* 4-402

. . . For your copy circle No. 199

Container line

The NesTier line of boxes, baskets, hopper racks, rollover hoppers, and shelf racks for use in storage, production, assembly, etc., is described in a new bulletin. Photos illustrate application possibilities. *Chas. Wm. Doepke Mfg. Co., Inc.* DN-1000

. . . For your copy circle No. 200

Metal joining

Profitable applications for low heat input metal joining on all base metals and techniques and alloy recommendations for cast iron repair without preheat are covered in new Eutectic folder. Special information is given on a line of metal working electrodes and wear resistant welding material. *Eutectic Welding Alloys Corp.* 2496

. . . For your copy circle No. 201

Dumping system

A simple explanation of the Dempster-Dumpster system of equipment is given in a new 16-page catalog. It includes drawings of the equipment and photos of the system in use. *Dempster Bros.* D-D 155

. . . For your copy circle No. 202

FOR BETTER WORK AT LOWER COST!



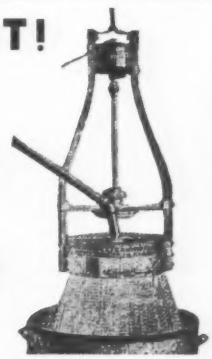
COMBS SCREENING & SIFTING MACHINES

For any Dry, Moist or Liquid Material

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TYPE "B-4" & JUMBO
For sifting starch, cocoa, abrasives, dry colors, drugs, wheat, corn, cork, sugar, and many others. Both machines made four, six or eight sieves deep for various capacities and separations. Materials sifted can be cleaned, aerated and fluffed. Motors used are absolutely dustproof.

TYPES "V" AND "V-5"
For paints, enamels, chemicals, ceramic slip, paper, coatings, carbonates, chemicals, emulsions, fruit and vegetable juices, and every liquid that is strained. Supplied in standard construction as well as dustproofed for dry materials. Also available in stainless steel unit for pharmaceuticals.



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. . . for more details circle No. 125 on Reader Service Postcard

HELPFUL LITERATURE

Wet blasting process

Precision cleaning and finishing by the wet abrasive blast cleaning process will be covered in a quarterly brochure to contain many case history descriptions. First issue is devoted to the scope of the process and the diversity of applications that the process is capable of serving. Publication will be sent regularly to those who request it. *American Wheelabrator and Equipment Corp.*

. . . For your copy circle No. 203

Engineering and construction services

Complete engineering and construction services available from the Chemical Plants division of this firm are explained in a new bulletin. Specialized services in the fields of resins and plastics, fats and oils, chlorine and alkalies, petroleum and petrochemicals, wood utilization, fertilizers, low-temperature processes, synthetic fuels, and nuclear development are listed. *Blaw-Knox Co.* 2505

. . . For your copy circle No. 204

Pipe insulation

New Fiberglas insulation for preventing condensation on pipes operating at either high or low temperatures is described in this bulletin. A selection table listing insulation thickness to be used for various pipe sizes is included. *Owens-Corning Fiberglas Corp.*

. . . For your copy circle No. 205

Columbia Basin progress

Described as an empire in the making, the Columbia Basin's industrial and agricultural growth is illustrated in a 16-page booklet. Many maps, photos, and charts show the progress in this Northwestern area. *Seattle First National Bank.*

. . . For your copy circle No. 206

Steel strapping—How to use it

How to lower freight bills, end pilferage, reduce loss and damage claims, reduce container costs, and speed packaging and shipping is told in 44 pages of usable facts in Signode's new packaging and carloading guide. Applications of steel strapping to containers, brace open top and closed freight carloads, barricade car doorways, and many others are pictured with how-to-do-it instructions. *Signode Steel Strapping Co.* 16

. . . For your copy circle No. 207

High power batteries

A new line of high power batteries for use in the control, switchgear, emergency lighting, and auxiliary power fields are illustrated with data on battery ratings and capacities, details of design and construction, dimensions, weights, and types of containers in a new 4-page, 2-color bulletin, CP-538/55. *C and D Batteries, Inc.*

. . . For your copy circle No. 208

Portable spot welding

A 12-page reprint of "Spot welding from one side—with a portable gun," an article which appeared in a recent issue of *Product Engineering*, describes an inert-gas-shielded tungsten arc spot welding process. Booklet is broken into sections on when to consider spot welding from one side, how the equipment operates, standards and test procedures, factors affecting weld quality, and applications. *Air Reduction Pacific Co.*

. . . For your copy circle No. 209

Bronze globe valves

Bronze globe valves utilizing a new alloy for seats and discs are completely described and illustrated in a 4-page bulletin. Cut-away drawings show how the valve functions and the features of the new type seats and discs. *Lunkenheimer Co.*

. . . For your copy circle No. 210

Titanium alloy

New bulletin describes the MST 6A1-4V titanium alloy, listing its metallurgy, chemistry, properties, and recommended heat treatment, forging, and welding procedures. Results of various tests on the alloy are also listed. *Mallory-Sharon Titanium Corp.*

. . . For your copy circle No. 211

Storage equipment

Sixteen illustrated pages describe Frick-Gallagher's line of racks, bins, shelves, and pallet frames. General description and specifications for more than 120 models are included. *Frick-Gallagher Mfg. Co.* 702

. . . For your copy circle No. 212

ROLL RITE

MATERIALS HANDLING EQUIPMENT

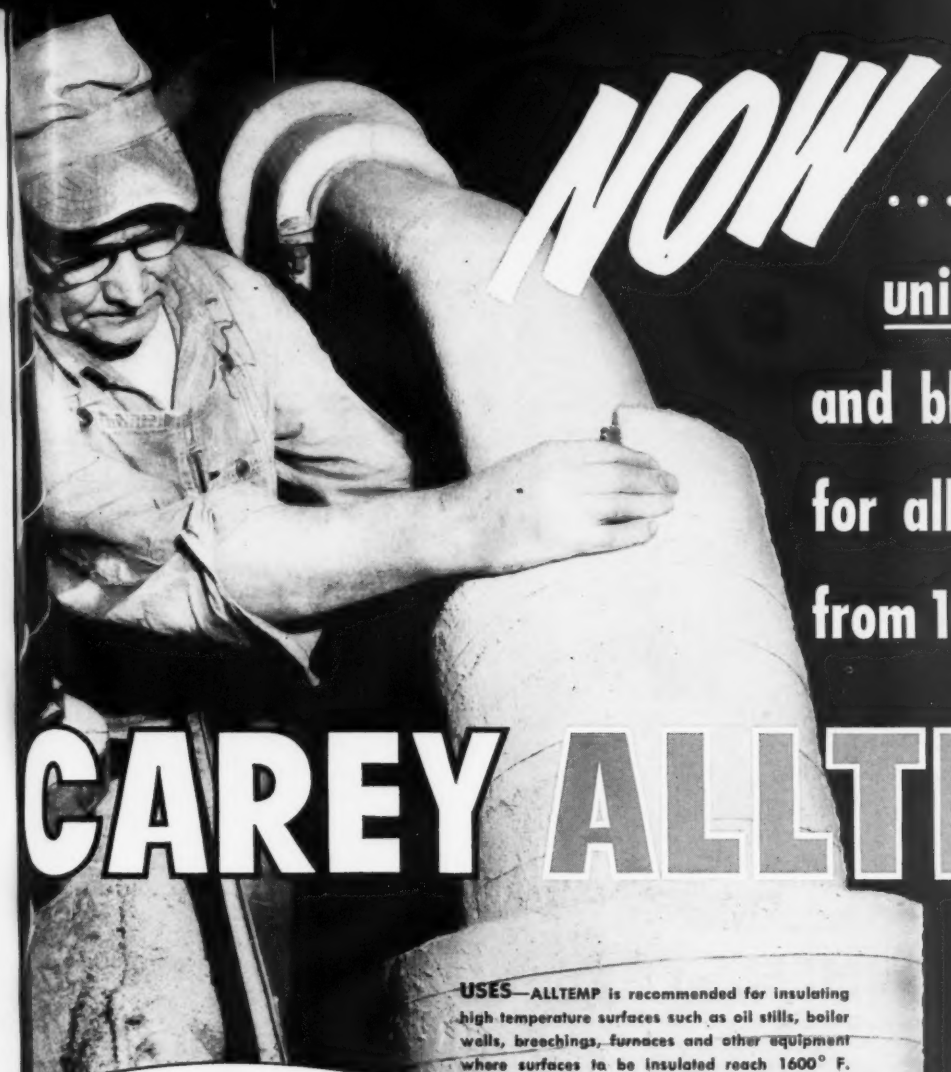
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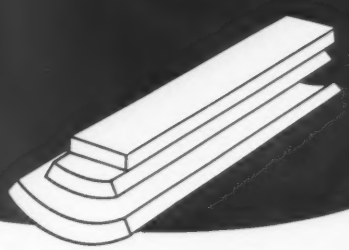
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ALLTEMP keeps every last BTU on the job producing power. Its extremely low percentage of shrinkage—approximately ⅔ *less* than other 1200° F. insulation materials—means joints won't open, cracks won't appear in covering. BTU's are *locked in!* ALLTEMP retains its high thermal efficiency and structural strength even after long, continuous exposure to excessive heat and moisture. Non-brittle, it resists blows, abrasions; won't crack or crumble under severe service conditions. And it's easy on the hands—easy to cut, fit, install!

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ALLTEMP RECOMMENDED THICKNESS

Nominal Pipe Size Inches	Temperature Difference °F 80° Air					
	200	400	600	800	1000	1200
	Nominal Thickness, Inches					
1½ & Under	1	1	1½	2	2½	3
2	1	1½	2	2½	2½	3
2½	1	1½	2	2½	3	3½
3	1	1½	2	3	3	3½
3½	1	1½	2	3	3½	3½
4	1	1½	2½	3	3½	4
4½	1½	2	2½	3	3½	4
5	1½	2	2½	3	3½	4
6	1½	2	2½	3½	4	4½
7	1½	2	2½	3½	4	4½
8	1½	2	3	3½	4	4½
9	1½	2	3	3½	4½	5
10	1½	2½	3	4	4½	5
11	1½	2½	3	4	4½	5
12	1½	2½	3	4	4½	5
14 & Over	1½	2½	3½	4	4½	5½

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HELPFUL LITERATURE

pH indicator

New data sheet describes Leeds and Northrup's new AC operated pH indicator for stabilized AC operation. How it is being used for pH and redox work, Karl Fischer titrations, and other dead-stop end-point measurements in laboratories and plants, and all pertinent specifications and operating data are included. *Leeds and Northrup Co.* E-96(2)

. . . For your copy circle No. 213

Conveying by steel belt—How and why

Extensive engineering and application information on Sandvik steel belt conveyors has been compiled and made available in a 48-page hard-cover book. Fully illustrated with photographs and drawings, the book gives details on characteristics, capacities, adaptations, and design. A step-by-step description on the construction of a typical steel belt conveyor is also included. *Sandvik Steel, Inc.*

. . . For your copy circle No. 214

Adapter pumps

Allis-Chalmers Model C-3 supporting adapter "Electrifugal" pumps are described in a new 2-color, 6-page bulletin. Pumps described include those having a casing with removable suction cover and those having a casing with suction and discharge nozzles in one piece. *Allis-Chalmers Manufacturing Co.*

. . . For your copy circle No. 215

How to make meeting room equipment

Instructions telling how to make lecterns, flannel boards, easels, and other items of meeting room equipment from aluminum are given in a new 12-page booklet entitled "Meeting Room Equipment Ideas." *Reynolds Metals Co.*

. . . For your copy circle No. 216

Hoists and cranes

Capacities, specifications, and descriptions of heavy duty and portable load handling equipment are listed in a new 24-page booklet. Several models of hoists, cranes, and A-frames are included. *Manning, Maxwell & Moore, Inc.* 406

. . . For your copy circle No. 217

Arizona resources report

The first report on a survey of natural resources of the Navajo-Hopi Indian reservation in Arizona evaluates the pinyon resources of about 25,000 sq. mi. Conducted by the University of Arizona, the survey reveals that the cost of collecting the resin is estimated at 15 to 20 cents per pound. Pinyon has markedly superior qualities when used in production of highly resistant water varnish. *Navajo Agency, Bureau of Indian Affairs.*

. . . For your copy circle No. 218

Steel sheet user handbook

The story of development and production of steel sheet in all forms is told in this well illustrated, 64-page handbook. How it is made, how to select, how to use, and other data is given for hot rolled, cold rolled, galvanized, paintbond, flat, coiled, and numerous other forms of steel sheet and the services of U. S. Steel Co. are described. *Columbia-Geneva Steel, United States Steel Co.* 1078-10M54

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GAR-BRO WHEELS

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See Directory listing page 109, Yellow Section

Liquid meters

New 8-page bulletin describes the Rockwell line of industrial meters for suppliers of liquid propane, liquid anhydrous ammonia, and liquid oxygen. The Parkhill Wade dispensing system and its advantages for high vapor pressure liquids is explained and typical installations for both tank trucks and bulk-loading stations are described. *Rockwell Mfg. Co.* OG 407

. . . For your copy circle No. 220

Sit-down fork truck

A new 6,000-lb. capacity, sit-down, center control fork truck is described in a bulletin which lists complete specifications and operating data. Line drawings show complete dimensions. Write to the *Mercury Manufacturing Co.*

. . . For your copy circle No. 221

Expanded stainless steel

A line of expanded stainless steel is listed with sizes, dimensions, and weights of 9 different meshes in both standard and flattened types. A few of the uses of the steel are explained and illustrated. *Penn Metal Co., Inc.*

. . . For your copy circle No. 222

Speed reducers

The new Foote line of speed reducers with capacities ranging from fractional hp. to 150 hp. has been illustrated in a 40-page book. Complete engineering data and specifications for all models are listed. *Foote Bros. Gear and Machine Corp.* LP3

. . . For your copy circle No. 223

Tramrail systems

Complete line of rail, switches, trolleys, and cranes for tramrail installations is illustrated and explained in brochure. Drawings and photographs show the features of the equipment and illustrate it in use. *Forker Corp.* 110

. . . For your copy circle No. 224

G-E fusible service entrance

Seven basic types of fusible service entrance devices for light industrial, commercial, farm, and home applications and accessories such as interchangeable raintight box hubs are explained in a new 16-page bulletin. Ratings, wiring diagrams, dimensions, and complete ordering information for the new fusible devices are also included. *General Electric.* 6286

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Here's POWER to speed up your packing



At the Flintkote Co., Lockport, New York, a switch in binding material (from wire to Stanley Steel Strapping) and method saves both time and money. Operators stand on high platforms where they easily, quickly and automatically steel strap automotive insulation material to pallets. One band around each end secures a bundle for safe shipment. And, with each operator using a Stanley Electric Skid Magazine Tool, *strapping time is cut in half.* Note, too, the out-of-the-way Stanley Overhead Reels suspended from the ceiling and the use of Stanley Corner Protectors.

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SKID MAGAZINE TOOL

The answer to faster cost-cutting packaging procedures is . . . POWER! Put POWER in *your* packing. Use the STANLEY ELECTRIC SKID MAGAZINE TOOL to steel strap your product to skids or pallets. The operator simply squeezes a trigger. The tool's powerful electric motor tightens the strapping to the ***desired pre-set tension.*** Easy to use horizontally or vertically on high or low skids or pallets, the Electric Skid Magazine Tool with Automatic Seal Feed lowers labor costs and ups packing output — ***automatically.***

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. . . for more details circle No. 132

HELPFUL LITERATURE

Crane and hoist control

New bulletin lists the features and applications of the Hydra-set, a hydraulically operated control for use on cranes and hoists. Dials indicate return force in pounds and weight of the load, while two levers give the operator control of the vertical movement of the crane or hoist to 1/1000 in. *Mefco Sales & Service Corp.*

. . . For your copy circle No. 226

Monel and nickel valves

Corrosion-resistant properties of Monel and nickel valves are discussed in a new 4-page bulletin. Specific applications for which each valve is best suited, casting compositions, and mechanical properties are included. *Alloy Steel Products Co., Inc.* 9

. . . For your copy circle No. 227

Lathe centers

A general catalog of centers made expressly for lathes lists data on shanks, spindles, bull, and pipe type centers with complete specifications and prices for each. *Ready Tool Co.*

. . . For your copy circle No. 228

Food cooker and cooler

Modern food processing as achieved by a new continuous pressure cooker and cooling machine is explained in a new 16-page brochure. It points out the benefits of in-can sterilization with respect to nutrients, color, flavor, and quality of food products. *Food Machinery and Chemical Corp.* 301W

. . . For your copy circle No 229

Inventory control

Balanced stocks and cost reduction from inventory control is explained in a new 16-page brochure. The essentials of good inventory control, how the Kardex visible system exercises this control for either projected forecasts or past usage, and the phases of various inventory control systems are all described and illustrated. *Remington Rand Inc.* KD-406

. . . For your copy circle No. 230

Rotary pumps

The Tuthill line of positive displacement, internal gear, rotary pumps is illustrated in a new 8-page catalog. Applications, operating data, and specifications for the pumps which are designed for use on compressors, engines and power units, machine tools, oil burning equipment, speed reducers, and special machinery are included. *Tuthill Pump Co.* 100

. . . For your copy circle No. 231

Materials handling— How it's being done

Three new case history reports on advantages of properly designed and installed materials handling equipment are now available. Information on the type of operation involved, equipment installed, results obtained, etc., is given in the illustrated brochures covering installations involving power-tool manufacture, engine maintenance procedures, and the fabrication of bristle and nylon brushes. *The Rapids-Standard Co., Inc.*

. . . For your copy circle No. 232

All metal locknuts

Locking action of a one-piece nut which can be used either as a locknut or a stop nut is illustrated in a new 4-page bulletin. Application illustrations include use on main bearing bolts, spring shackles, exhausts, motor housings, differentials on transportation equipment, panel boards, fluorescent lighting fixtures, and many others. *Standard Pressed Steel Co.* 913

. . . For your copy circle No. 233

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Water pollution study

Investigation of the travel of water pollution by the University of California resulted in this report. Problems involved in the artificial recharge of aquifers with reclaimed sewage and other waste materials are discussed as well as bacteria travel. Limited number of copies available. *State Water Pollution Control Board.* 11

. . . For your copy circle No. 234

Automatic packaging

A machine that automatically seals up to 7,000 gaskets per hour to government specifications in individually printed envelopes is described in illustrated brochure. The Pak-O-Mat is equipped with interchangeable sleeves to handle products up to 6 in. OD and ¾ in. thick. *Product Packaging Engineering.*

. . . For your copy circle No. 235

Stainless steel electrodes

Designed to help users select the proper electrode to meet their requirements, this 4-page bulletin gives Arcaloy designations, electrode data, and application data for 22 stainless steel electrodes in the Arcaloy line. General use information and particular welding characteristics of the electrodes are included. *Alloy Rods Co.* 59

. . . For your copy circle No. 236

Planning a toolroom heat treating department

A guide to assist those planning new, enlarged, or redesigned heat treating departments is available in 24 pages which show layouts, give approximate floor space requirements, and list auxiliary equipment such as tongs, straightening presses, work benches, and hardness testers. How to select furnaces of the proper size is also discussed. *Lindberg Engineering Co.*

. . . For your copy circle No. 237

Fingerprint remover

Developed to reduce rejection of metal parts caused by corrosion started from fingerprints, Cosomoline 1070 fingerprint remover is described in a new 4-page bulletin. The product is especially useful in protecting highly polished or super-finished surfaces from corrosion. *E. F. Houghton & Co.*

. . . For your copy circle No. 238

Monomast lift truck

Hyster's new lift truck designed with a single lifting mast which gives the operator a wider view is described in a 4-page fold-out bulletin. The trucks are available in 3,000-lb. and 4,000-lb. capacities. *Hyster Co.* 1404

. . . For your copy circle No. 239

Water filtration

How Celite filtration provides clarity in potable water, process water, and plant wastes is explained in a new 12-page brochure. Representative installations are cited and examples of special interest to plant and power engineers are pointed out. *Johns-Manville.*

. . . For your copy circle No. 240

Personnel transportation

Moving rubber sidewalks, a new means of transporting large crowds of people, are discussed in a new folder, which is built around a paper presented to the Western Society of Engineers by W. L. Hartley. Capacity, crowd behaviors, and points to consider in selecting various models are covered. *Link-Belt Co.* 2567

. . . For your copy circle No. 241



Faster Service on DEPENDABLE Dick Power Transmission and Conveying Equipment

3 CONVENIENT WEST COAST SERVICE CENTERS

You'll get immediate attention and fast deliveries when you contact one of R. & J. Dick Company's three easily accessible West Coast offices and warehouses — at Los Angeles, San Francisco or Seattle.

Each center is stocked with the complete line of *dependable* Dick power transmission and conveying equipment . . . accepted by manufacturers who rely on the Dick line to help them avoid costly breakdowns and production delays. For information on how you can step up *your* plant's efficiency, call or write the office nearest you.

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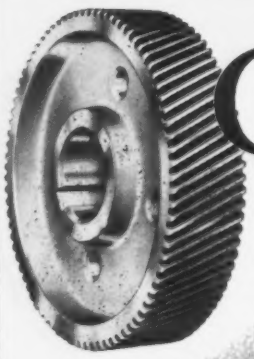


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new *Handler*
Lifts 4,000 lb. Loads
it's
WISCONSIN-POWERED!



The operator of this new Handler built by Colson Corp., Elyria, Ohio, uses only *one* fool-proof control to lift 4,000 lb. loads free of the floor. By a touch of the *same* control lever, the operator shifts into either forward or reverse speeds . . . on stops the same control also governs the brakes. And when it came to choosing power for this unique machine, Wisconsin Heavy-Duty Air-Cooled Engines got the nod . . . with good reason.

The power plant is the 4-cycle single-cylinder, 6 hp. AKN model. It combines heavy-duty lugging power with compactness . . . minimizing the problems of the design engineers. It also offers such features as tapered roller bearings at both ends of the crankshaft, fool-proof air-cooling and rugged construction throughout . . . to deliver the kind of dependability users expect to get. And the Wisconsin's easily serviced OUTSIDE magneto with impulse coupling delivers quickest, any-weather starts and steadiest performance *always*.

Write for details about all 4-cycle single-cylinder, 2-cylinder and V-type 4-cylinder models, 3 to 36 hp.



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World's Largest Builders of Heavy-Duty Air-Cooled Engines
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HELPFUL LITERATURE

Mechanical pressure gage

Data on the Dillon switch model mechanical pressure gage, made to measure mechanical forces in a wide variety of industrial applications, are outlined in a new engineering brochure. Details of the switch arrangement and ratings are given and full specifications are listed. *W. C. Dillon Co.* PG-4

. . . For your copy circle No. 242

Flow meters

Bone Type 350 metering equipment and calibration equipment for meters is described and illustrated in a new 4-page catalog. General specifications and the features of the equipment are included. *Bone Engineering Corp.*

. . . For your copy circle No. 243

Lockbolts

New product designed for quick, high clinching and permament fastening is described and fully specified in 8-page bulletin. A wide variety of applications of the locknut are illustrated and diagrams show how it works. *Townsend Co.*

. . . For your copy circle No. 244

Fluid drives

American Blower's new VS Class 2 Gyrol fluid drive for general purpose industrial applications is fully described in an 8-page bulletin. It discusses the advantages and applications of the new fluid drives, itemizing such factors as speed control, power savings, no-load starting, torque limitation, acceleration control, shock absorption, and simplified installation. *American Blower Corp.* 9419—9519

. . . For your copy circle No. 245

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MATERIAL HANDLING CO.
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Los Angeles 32, Calif.

. . . *for more details circle No. 136*

WESTERNERS AT WORK

ARIZONA

Arizona Public Service Co.

Walter T. Lucking, former vice president in charge of operations, becomes president of this company, succeeding *Henry B. Sargent*, who now heads American and Foreign Power Co., Inc., New York. *Claire Titus* is elected a vice president.

CALIFORNIA

Pacific Intermountain Express

Frank P. Lucus becomes assistant to executive vice president of company at Oakland and will carry out special assignments on company's expansion program. He joined P-I-E at the time it acquired System Tank Lines, where he served as vice president of sales and traffic.

Pioneer Tool Engineering, Inc.

Marvin L. Kaufmann joins this El Segundo company as assistant to president and is serving as manager of Consolidated Casting Co. and Republic Smelting and Refining Co., two subsidiaries. He was formerly with an Indiana aluminum reduction company.

Rheem Manufacturing Co.

William S. Rheem II, is named a vice president of this South Gate manufacturer. *Gordon W. Mallatratt*, general manager of products division, is also named a vice president. *Dale F. Mason* is appointed technical control manager for U. S. Spring and Bumper Co., automotive division of Rheem.

Western Gear Works

Charles F. Bannan, vice president of this Los Angeles company, is elected president of Junior Achievement of Los Angeles County, Inc., which sponsors miniature corporations formed and operated by teen age youngsters.

Harvill Corp.

Arthur Townhill joins this Los Angeles die-casting firm as director of engineering. His background in metals field includes twenty years with Thompson Products, Cleveland.



Arthur Townhill
Harvill Corp.



T. E. Williams
Joseph T. Ryerson & Son, Inc.

Joseph T. Ryerson & Son, Inc.

Thomas E. Williams, superintendent of Los Angeles steel service plant, is also named general superintendent of company's West Coast plants. He has been with Ryerson for over thirty years, moving to Los Angeles in 1954.

Ungar Electric Tools, Inc.

Alvis R. Knowles is appointed director of manufacturing for this Los Angeles concern.

Friden Calculating Machine Co., Inc.

Roy C. Renholts is appointed factory manager for this San Leandro company. Production manager for past ten years, he succeeds *Dunstan S. Gross*, who has been named vice president in charge of research engineering. *Earl B. Olson* is promoted to post of purchasing agent, vacated by retirement of *Sam Harper*.



R. C. Renholts
Friden Calculating Machine Co.



R. F. Pinson
Hubbard and Co.

Hubbard and Co.

R. Frank Pinson is named superintendent of Oakland plant, an advancement from post of assistant superintendent which he has held since 1939. He succeeds *Edward H. Grob*, who recently retired after 49 years' service.

American Potash and Chemical Corp.

A. J. Carrado is appointed personnel and office manager of subsidiary American Lithium Chemicals, Inc., San Antonio, Tex. He has been serving as engineering administrative assistant at company's main plant, Trona. *James H. Jensen* joins company as advisory engineer at Trona. He was last with Ralph M. Parsons Co. of Los Angeles.

Clorox Chemical Co.

Dr. Thomas D. Parks is appointed director of research for this Oakland company. He was formerly chairman of department of chemistry at Stanford Research Institute.

Consolidated Chemical Industries Inc.

J. C. Crowder, formerly general superintendent of company's southern division at Houston, moves to San Francisco as vice president and general manager in charge of West Coast and East Coast glue operations.

Hoffman Electronics

Vice Admiral John B. Moss, U. S. Navy (ret.), is appointed president of Hoffman Laboratories, Inc., subsidiary of Hoffman Electronics, Los Angeles.

Lear, Inc.

Andrew F. Haiduck, former vice president, is elected executive vice president in charge of manufacturing of this Santa Monica company. *Chester D. Seftenberg*, former treasurer, is elected vice president and treasurer.

Nader Manufacturing Co.

Robert T. Schultz is appointed chief engineer of electronics division for this Monrovia manufacturer. Before joining Nader, he was with Hughes Aircraft Co., Culver City.

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for all materials handling equipment. Whether your needs are . . .



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. . . SMALL



"Everything from cranes to casters"

Select all your equipment from Hamerslag, one of the largest materials handling firms in Northern California. Agents for:

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The Mercury Manufacturing Company
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WESTERNERS AT WORK

Convair Division
General Dynamics Corp.

Three engineers move up to staff level by appointment of vice president of engineering, San Diego: *Jack L. Bowers*, who has been chief systems development engineer and chief development engineer at company's Pomona division, will now supervise Convair electronic activities, particularly technical planning for research and development and product design. *Jack Mason*, former manager of Convair's low speed wind tunnel, will have responsibility for all engineering facilities, and jointly with *Grant D. Christensen* (assistant to Vice President R. C. Sebold) over all airplane projects. *Dr. Marvin Stern*, who has been a design specialist on missile projects, will be in charge of liaison between Convair engineering and group of scientific consultants engaged by Convair earlier this year.

A. W. Hotchkiss is named superintendent of test equipment and checkout and *L. J. Enfield* becomes superintendent of missile manufacture, both newly created positions in operations department at Convair-Pomona. *D. C. Burrows* is appointed controller at Convair-San Diego.

Leslie Salt Co.

Newly elected president of this San Francisco firm is *Sheldon Allen*. *Joseph C. Buchen* is vice president and *Harry E. Kellogg*, secretary and treasurer.

Micropoint Co.

New plant and production manager of this Sunnyvale manufacturer of ball-point pen refills is *Hubert Ray*. He was formerly production foreman for L. A. Young Spring and Wire Corp.

Lenkurt Electric Co.

P. C. DeMuth joins this San Carlos manufacturer as editor of Lenkurt Demodulator, monthly engineering magazine published by company, and as consultant to applications engineering division. A veteran in telephone transmission engineering, Mr. DeMuth retired from American Telephone and Telegraph Co. in 1954.

Kaiser Aluminum and Chemical Corp.

L. J. Barker is appointed chief specification engineer, with offices at company headquarters in Oakland. He joined Kaiser Aluminum in 1947, and his most recent post was specification engineer at Spokane, Wash., department of metallurgical research.



L. J. Barker
Kaiser Aluminum and Chemical Corp.

C. A. Lindsay
Stauffer Chemical Co.

Stauffer Chemical Co.

Charles A. Lindsay is named general manager of container division in Los Angeles. He has been with company for past 12 years, most recently as production manager for Southern California.

COLORADO

Great Western Sugar Co.

Lynn Pitcher is advanced to position of assistant manager of Greeley and Eaton factories, moving up from post of fieldman at Eaton. *Elmer A. Anderson* retires from post of agricultural superintendent at Greeley, after 38 years' continuous service with company.

U. S. Chamber of Commerce

James L. Craig, Jr., is named manager of Denver district, and will work with local chambers of commerce in Colorado, New Mexico, and other states. He has had nine years' experience as executive secretary of Pocatello, Ida., chamber of commerce.

Denver Research Institute

Joining staff as technical consultants, *H. C. Coupland*, Major General USAF (ret.), and *Dr. A. W. Friend* will work with this Denver organization.

Cudahy Packing Co.

A. P. Hurwitz moves to Denver as general manager of packing plant in that city, succeeding *Carl F. Albrecht*, resigned. Mr. Hurwitz has been in charge of company's Wichita plant.

NEW MEXICO

Atomic Energy Commission

Kenner F. Hertford, Major General USA (ret.), is appointed manager of Santa Fe operations office, with headquarters at Albuquerque. He succeeds *Donald J. Leehey*, who has resigned after serving as manager since February 1954.

NEW

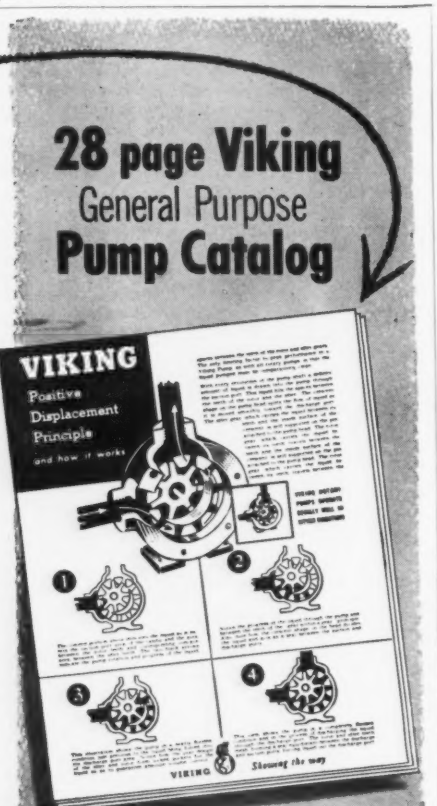
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Pacific Coast Distributors
E. E. Burton, 4432 Long Beach Ave., Los Angeles 58, Calif.
DeLaval Pacific Company, 201 E. Millbrae Ave., Millbrae, Calif.
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See Directory listing page 123, Yellow Section

OREGON

United States Plywood Corp.



M. R. Leeper *K. L. Morrow*
United States Plywood Corp.

Marshall R. Leeper is new general manager of Associated Plywood division operations at Eugene, Willamina, and Roseburg, acquired by U. S. Plywood last January, as well as planned facility at Gold Beach. He was formerly president and general manager of Shasta Box Co. *Kenneth L. Morrow* is named general manager of Shasta division operations at Anderson, Redding, Douglas City, and Willow Creek, Calif. He joined company in 1950 as production manager of Shasta plywood and Novoply operations.

Consolidated Freightways

John L. S. Snead, Jr., succeeds *Leland James* as president of this Portland motor freight company. Mr. James becomes chairman of board. Mr. Snead has been executive vice president since 1949.

Swift and Co.

T. O. Waller moves from Iowa, where he has been superintendent of Swift plant at Marshalltown, to new post of superintendent of North Portland meat packing plant. He succeeds *E. J. Vondra*, superintendent for past four years, who is transferred to National Stock Yards, Ill.

Western Forest Industries Assoc.

Joseph W. McCracken is named executive vice president of this organization with headquarters in Portland. He succeeds *Reginald T. Titus*, who will devote full time to Western Forest Industries Review, published by this organization. Mr. McCracken was formerly with the Bureau of Land Management in Portland.

UTAH

Kennecott Copper Corp.

Thomas J. Hubbard becomes general master mechanic of Magna mill, under company's Utah Copper division. He moves up from post of maintenance and construction engineer at Hurley plant of Chino Mines division and succeeds *Albert J. Fitzgerald*, who has retired.

Utex Exploration Co.

Julian C. Ashby is named general manager of this Moab uranium mining company. He has been chief geophysicist since first of year.

United States Steel Corp.

Columbia-Geneva Steel Division promotes *William H. Blomquist* to electrical engineer of Geneva works; *Joseph A. Nelson* to safety inspector; *Robert K. Noyes* to supervisor of project engineering.

WASHINGTON

R-W Paper Co.

Robert W. Harper is named as resident manager of projected glassine and paper plant to be built in Longview by this new company, jointly owned by Weyerhaeuser Timber Co. and Rhinelander Paper Co. of Wisconsin. Mr. Harper leaves post of director of purchases for Rhinelander company.

Kaiser Aluminum and Chemical Corp.

Clyde R. St. John is named mill products manager at Trentwood works, and *Forrest E. Knight* becomes administrative assistant at Trentwood.

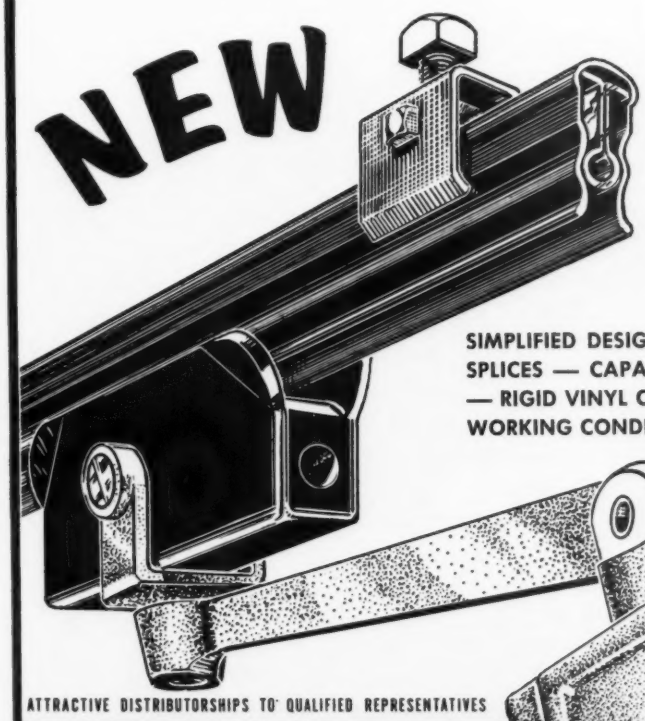
Fir Door Institute

New managing director of this Tacoma organization is *Benjamin T. Cardinal*, formerly Midwest field representative for Douglas Fir Plywood Assoc. He fills post vacated by James F. Fowler, who moves to Douglas Fir Plywood Assoc. as director of promotion, a newly created post.

Weyerhaeuser Timber Co.

David M. Fisher, manager of Willapa branch operations at Raymond, is also placed in charge of newly acquired Aberdeen mill.

NEW



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Never before, has industry been offered a method of electrifying crane and hoist equipment that is as safe, easy and trouble-free! Duct-O-Bar Conductor Systems establish a new high standard of adaptability and performance. Find out **how and why** these Duct-O-Bar features can make your present, or contemplated facilities more efficient —for less:

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See Directory listing page 108, Yellow Section

WESTERNERS AT WORK

Crown Zellerbach Corp.

Dr. W. M. Hearon, former assistant director of research, is named general manager of newly-created chemical products division for this company at Camas.

General Electric Co.



R. S. Bell *W. K. MacCready*
General Electric Co.

W. K. MacCready is named manager of manufacturing at Hanford atomic plant. He moves up from post of manager of reactor section, which will be filled by *Robert S. Bell*, former manager of separations section. *J. Emmett Maider, Jr.*, who was last manager of manufacturing, is transferred to Schenectady, N. Y., as head of reactor project being built by GE under agreement with Commonwealth Edison Co. *J. Hugh Warren*, former superintendent of reactor operations sub-section, is promoted to manager of separations section, succeeding Mr. Bell.

ASSOCIATIONS ELECT

American Institute of Industrial Engineers (San Francisco-Oakland chapter):

President, *A. B. Casad*, industrial engineer, Gantner and Mattern Co., San Francisco; vice president, *Bob Knighton*, market analyst, Columbia-Geneva Steel Division, San Francisco; secretary, *John Ochsner*, Pacific Coast Engineering, Alameda; assistant secretary, *Henry Wiltens*, industrial engineer, Trailmobile Inc., Berkeley; treasurer, *Henry Wood*, plant engineer, Marchant Calculators, Oakland.

Douglas Fir Plywood Assoc.:

President, *Howard B. Garrison*, vice president and general manager of Evans Products Co., Coos Bay, Ore.; vice president, *A. W. Agnew*, vice president of Pacific Coast Co., Sonoma, Calif.; secretary, *Monford Orloff*, general manager of Mt. Baker Plywood, Inc., Bellingham, Wash.; treasurer, *C. Henry Bacon, Jr.*, vice president and general manager of Simpson Logging Co., Shelton, Wash.

Rocky Mountain Coal Mining Institute:

President, *Robert L. Hair*, Colorado Fuel and Iron Corp.; Utah vice president, *Melvin A. Sharp*, Columbia-Geneva Steel Division, U.S. Steel Corp.; Wyoming vice president, *Mike Zakotnik, Jr.*, Kemmerer Coal Co.

Timber Products Manufacturers' Assoc.:

President, *Larry R. Pugh*, St. Maries Lumber Co., St. Maries, Idaho.

Western Powdered Metal Fabricaters:

Chairman, *John Mikitka*, Kwikset Powdered Metal Products; vice chairman, *Al Williams*, Ceromet, Inc.; secretary, *Robert Remington*, Picco, Inc.

American Foundrymen's Society (Southern California chapter):

President, *William Baud*, Mechanical Foundries; vice president, *William Mitchell*, Utility Steel Foundry; secretary, *Frank Warga*, AiResearch Manufacturing Co.; treasurer, *Otto H. Rosentreter*, Otto H. Rosentreter Co.

American Management Assoc.:

Vice president in charge of general management division, *Alden G. Roach*, president, Columbia-Geneva Steel Division, United States Steel Corp., San Francisco.

Radio-Electronics-Television Manufacturers Assoc.:

President of board of directors: *H. Leslie Hoffman*, president of Hoffman Electronics Corp., Los Angeles.

American Marketing Assoc. (Southern California chapter):

President, *Warren Murdock;* first vice president, *Donald C. Towers;* second vice president, *Russell L. Chrysler;* treasurer, *Robert P. Rayce;* secretary, *George H. Hutchings.*

American Material Handling Society (Northern California chapter):

Chairman, *J. E. Delsol*, Encinal Terminals, Alameda.

Cut costs ..speed up parts handling with



Blackman plastic containers

Light and rugged, Blackman plastic containers facilitate inventory control... are ideal for packing fragile or expensive parts. Longer life cuts replacement costs to the bone.
Available in standard styles and sizes, Blackman tote boxes, trays, covers and inserts can also be contoured to individual requirements. Unusual applications are a specialty!

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pioneer producers of formed plastic products

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RUGGEDNESS in Motion

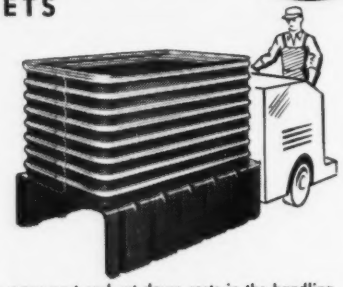


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STEEL BOXES, SKIDS and PALLETS

STEEL BOXES
Dump box type, roll-over, fork-truck type, tiering type and special purpose units.

STEEL SKIDS
4" to 18" high in wide range of sizes.

STEEL PALLETS
Single-face, semi-double face and double-face types available in many sizes.



Designed to speed up movement and cut down costs in the handling of materials in this competitive, fast-moving era — these Republic steel boxes, skids and pallets are meeting industry's needs everywhere. Precision-fabricated from strong, corrugated steel sheets, these practical, flexible items can be used in combination with power lift trucks, cranes or hand-operated units.

OTHER PRODUCTS FOR INDUSTRY
Steel shelving, shop desks, tool room equipment, lockers, office desks, bar racks, files and tables.

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Representatives:
REPUBLIC STEEL CORPORATION
(Pressed Steel Division)

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Telephone: TRinidad 2-7621

5424 E. Slauson Ave., Los Angeles 22, Calif.
Telephone: RAymond 3-3327

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TRADE WINDS

New distributor for Whiting

Whiting Corp., Harvey, Ill., with plant facilities and sales offices in Norwalk, Calif., appoints California Crane and Equipment Corp., South Gate, Calif., as exclusive distributors of its Trambeam and monorail type crane systems. New distributor will handle the Southern California and Southern Nevada area.

New Western outlet

Nutting Truck and Caster Co., Faribault, Minn., establishes new warehousing facilities in Oakland, Calif., to serve materials handling equipment users on the West Coast. The new facilities include a complete stock of the company's equipment and replacement parts and repair services.

New Birtcher representative

The M. A. Stolaroff Co., Los Angeles, is appointed sales representative for the electronic components manufactured by Birtcher Corp., also of Los Angeles. Mr. Stolaroff will cover the area of Southern California, Southern Nevada, and Arizona.



M. A. Stolaroff
Birtcher Corp.



Richard Saunders
Forest Fiber Products Company

Appoint Saunders

Richard Saunders is new sales representative in San Francisco Bay and Coastal regions for Forest Fiber Products Co., Forest Grove, Ore., hardboard manufacturers. He will specialize in counseling on uses, applications, and merchandising of hardboard, with office in San Francisco.

Cooper-Bessemer promotes two



C. R. Jones



John McKissick
Cooper-Bessemer Corp.

C. R. Jones, former branch manager of Cooper-Bessemer Corp.'s Seattle office, is appointed manager of Western Canada for Cooper-Bessemer of Canada, Inc. He is replaced in Seattle by John McKissick, who formerly served with engineering and sales divisions in Seattle and San Francisco.

Sales Engineer Elmas

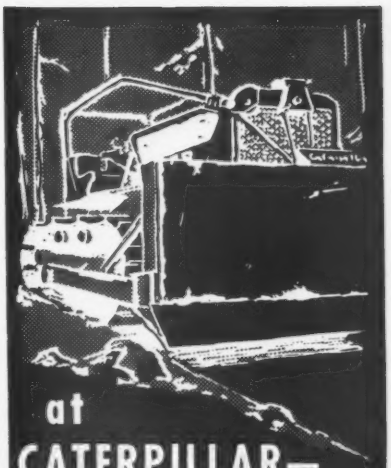
Speed-D-Burr Corp., Los Angeles, appoints William T. Elmas as sales and technical engineer in the Los Angeles territory, handling the company's line of precision barrel finishing equipment. He recently moved West from New Haven, Conn.

Distributors merge

Karl P. Heideman, Seattle, distributor for Utility Trailer Manufacturing Co., Los Angeles, and Earl R. Staley, former Seattle distributor for the company, merge to form Transport Trailer and Equipment Co. The new firm will handle Utility Trailer products in Northwest Washington, British Columbia, and Alaska. Mr. Staley, who recently returned from a position in Alaska, will be the new firm's general manager.

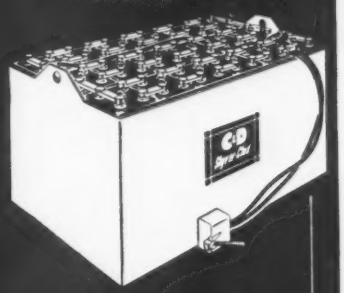
Braun Co. wins sales award

Robert H. Braun Co., Los Angeles, wins award from the Clark Equipment Co. for having sold more materials handling equipment during 1954 than any other Clark distributor throughout the world. The award was given the Braun Co. in 1952 also.



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York, Pa.

C&D BATTERIES
for EXTRA work



The big, yellow machines of Caterpillar Tractor Co. have long been a familiar part of America's construction scene. Naturally Caterpillar, pioneer and leader in the development of tract-type power, use thousands of pounds of materials to build their famous products. To help solve some of their material handling problems, Caterpillar uses C & D Slyver-Clad* batteries at their York, Pa. plant, as a source of power for their industrial trucks in daily operations. For Caterpillar, like hundreds of other important companies, has found it pays to power with C & D Slyver-Clad batteries.

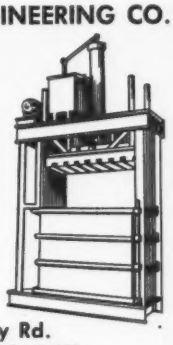


C & D Slyver-Clad batteries are approved as standard equipment by all electric truck manufacturers.
For further information, write for Catalog. *T. M. Reg.

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Industrial Batteries since 1906
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Plants: Milford, Conn.; Norwalk, Calif.; Elyria, Ohio; Aurora, Ill.; Hatboro, Pa.

Offices: Atlanta, Chicago, Cleveland, Detroit, Fort Worth, Indianapolis, Newark, New York, Pittsburgh, Racine, St. Louis, St. Paul, San Francisco, Seattle; Norwalk, Calif.; Stratford, Conn.; Charlotte, N. C.; Seneca Falls, N.Y.; Jenkintown, Pa.; Westwood, Mass.

Headquarters for RIVETS
Tubular, split and special cold-formed
and Rivet-setting Machines

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TRADE WINDS

Norelco sales engineer

Philip I. Wolf, Burlingame, Calif., is appointed resident sales and application engineer for the Western part of the country by the Research and Control Instruments division, North American Philips Co., Inc., Mount Vernon, N. Y. He will assist Philips sales representatives with technical application problems on Norelco electron microscopes, X-ray diffraction, X-ray radiography, X-ray spectroscopy, Portaflux magnetic particle testing, and other equipment.

Harvey Aluminum appoints two

Baker Steel and Tube Co. and Continental Metals, Inc., both of Los Angeles, are appointed tubing distributors for Harvey Aluminum, Torrance, Calif. Both firms will stock a full range of sizes and alloys of the tubing.

Fisk and Gillette changes

R. P. Buis, former assistant division manager in Los Angeles, is new Denver district sales manager for the Fisk and Gillette division of United States Rubber Co. E. G. Morrill is appointed Denver district sales manager of the firm's mechanical goods division. He served with the company's Houston, Tex., offices formerly.

Charge of machine sales

O & M Machine Co., Inc., Los Angeles designers and manufacturers of airborne equipment, appoints Don Parkin vice president in charge of sales. He has been with Taylor Forge and Pipe Works, Continental Motors, and Solar Aircraft Co.

National Welding elects Pohndorf

Henry L. Pohndorf is elected vice president in charge of sales by the board of directors of the Welding Equipment Co. of San Francisco. He was former general sales manager for the firm.



Easterners view NISA display

Looking over the display of Tri-State Supply Corp., Los Angeles, at the 22d annual National Industrial Service Assoc. show held in Los Angeles in June are (l. to r.): C. F. Bowers, president, Tri-State Supply; William Weirich, president, Lenni Products Co., Lenni, Pa.; Clayton Doremire, manager of electrical insulation, Dow-Corning Corp., Milwaukee, Wis.; and Richard Tiffany, technical representative, Dow-Corning.

AIR-POLLUTION *JITTERS?*

Get Better Smoke and Dust-Control with

John BEAN INDUSTRIAL PUMPS

Utilizing high pressures (up to 10,000 P.S.I.) BEAN pumps, with special nozzles, form billions of microscopic air-scrubbers... wash particles of dust, carbon or paint overspray from heavily-laden factory discharges.

The full potential for rugged BEAN pumps in this application has not been realized, but every hour of every day, BEAN dependability, efficiency and ease of maintenance meets and exceeds thousands of industrial requirements.

Let BEAN *engineers prescribe for your high pressure pumping needs. Write for catalog and prices.*



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John Bean Division, P.O. Box 145, San Jose 1, California
The World's Leading Pump Manufacturer!

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Wire on the West Coast

Standard Wire and Cable Co., Los Angeles, is appointed sales representative for Garfield Wire division of Overlakes Corp., Garfield, N. J., in Oregon, Washington, and California. Among other wire and cable products, the new distributor will handle a magnet wire used for guided missiles, electronics, and aviation industries.

ElectroData appoints Thatcher

John W. Thatcher, former engineering executive at Western Electric Co., is new customer service manager of ElectroData Corp., Pasadena, Calif. He will head a department of computer engineers and technicians responsible for installation and maintenance of Datatron electronic equipment.

New Pacific Coast manager

C. H. Dawson is appointed manager of the Pacific Coast district of the Shaw-Box Crane and Hoist division of Manning, Maxwell, and Moore, Inc., Muskegon, Mich. Formerly a field sales representative in the Los Angeles area, he will now maintain his offices in San Francisco.

Byron Jackson expands

Byron Jackson Co., Los Angeles, reorganizes and expands its Mechanical Seal Product division. Both the laboratory and engineering sections will be expanded. H. E. Tracy is named manager and D. F. Strang, product manager of the division.

American Latex sales manager

Lewis C. Pape is appointed sales manager of American Latex Products Corp., Hawthorne, Calif., foam rubber cushioning and synthetics materials manufacturers. He served formerly with the Industrial Products division of Goodyear Tire and Rubber Co., in Akron, Ohio.



L. C. Pape
American Latex Products Corp.



Edsel Curry
Weber Showcase and Fixture Co., Inc.

Sales Manager Curry

Weber Showcase and Fixture Co., Inc., Los Angeles, appoints Edsel Curry sales manager of its WeberWall division, with offices in Los Angeles. He will supervise marketing of the firm's moveable partitions systems.

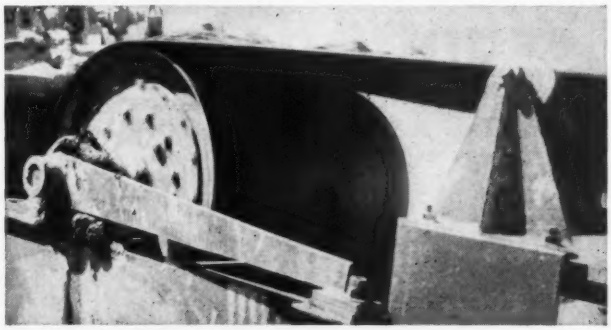
Chains in Utah

Utah Sprocket and Machinery Co., Inc., Salt Lake City, Utah, is new distributor of Diamond Chain Co., Inc., products.

"The Head Pulley with Motor Inside." Safe, compact, simple—no chains, no belts, no sprockets, no exposed motors.

Built by Yuba for sale in Arizona, California, Idaho, Montana, Nevada, New Mexico, Oregon, Texas, Utah, Washington.

Built and sold in other states by Iowa Mfg. Co., Cedar Rapids, Iowa.



IF YOU USE BELT CONVEYORS OR BUCKET ELEVATORS

SAVE SPACE, CUT DOWNTIME with YUBA-SCHROCK HEAD PULLEY

All moving parts fit compactly inside pulley shell, protected against weather and dirt, thus practically eliminating pulley troubles. This pulley with motor inside requires no more room than an idler pulley; can be installed quickly. Diameters 10½" to 56". ⅓ to 125 hp. for voltages to 2300. Job proved. Write TODAY for folder and name of nearest distributor.

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82 *Pulley and Sprocket Dept.*

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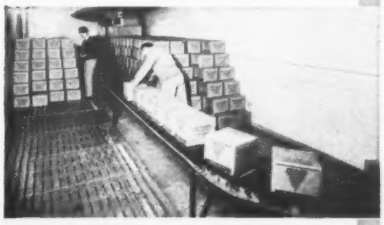
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Faster Piling with the HANDIPILER

• Saves time, money, and manpower. Ideal for storage areas—loading, unloading, piling, stacking. Boom is designed to pile up to 12 ft.—extends into corners, box cars, trucks, trailers.

Handles bags, bundles, packages up to 135 lbs.—reversible apron—conveys up or down. Available in 14 and 24 inch belt width. Write for Bulletin 63 E. Address Dept. WI-85.



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• Available in a complete line of sizes and capacities designed to allow the selection of the best roller conveyor for the job—from a 1 inch diameter roller, capacity 35 lbs. Any commodity with one smooth riding surface can be carried—boxes, cases, cartons, lumber, milk cans, brick, tile, units and parts. Straight sections and 90° and 45° curves. Write for Bulletin 63 E, address Dept. WI-85.

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PORTLAND: 1115 N.W. Glisan St.
SAN FRANCISCO: 840 Harrison St.
LOS ANGELES: 115 E. 23rd St.

Send for Bulletin 63-E, describing Standard gravity and power conveyors and conveyor units—address Dept. WI-85.



Standard GRAVITY & POWER CONVEYORS

. . . for more details circle No. 148
See listing page 121, Yellow Section

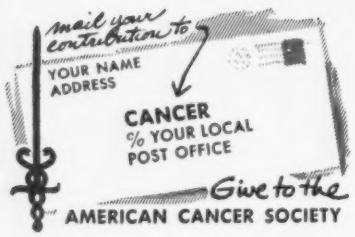
CLASSIFIED SECTION

Space is sold as advertisers' inches. All advertisements in this section are ⅛ inch short of contracted space to allow for borders and composition. Rates are $7.50 a column inch. Copy should be sent in by the 25th of preceding month if proofs are required; by the 28th if no proofs are required.

Sally King TU-3176 | MATERIAL HANDLING EQUIPMENT

Lift Trucks • Hand Trucks • Conveyors
Hoists & Cranes
Casters & Wheels

IRVING G. KING & CO. ★ SINCE 1930
821 MATEO ST. L. A. 21



SAVE ON RAILS



BUY "GUARANTEED RELAYERS"

Handle more cars better — spend less to install & maintain with Foster Relayers. "Open-stock" shipments, all sections 12# thru 175#. Switch Materials, Track items.

Send catalogs ☐ Rails ☐ Track Equipment
☐ Send Free 'Track Maintenance' Book

RAILS - TRACK EQUIPMENT - PIPE - PILING
L. B. FOSTER CO.
PITTSBURGH 30 NEW YORK 7
CHICAGO 4 HOUSTON 2 LOS ANGELES 5
3460 Wilshire Blvd. Los Angeles 5, Calif.

This space
costs $7.50
It will be worth
much more to you

LET PHOTOS Sell YOUR PRODUCT

GENUINE 8 x 10 PHOTOS as low as 7c each

WHY PAY MORE?
24 HOUR SERVICE
You Can't Buy A Better Photo At Any Price

8x10 Glossies { 1000—7c ea., 500—8c ea. / 100—10c ea., 50—13c ea.
Postcards { 5000—$21 per M. 2½c ea. in 1000 lots

FREE DELIVERY ANYWHERE
Made from your negative or photo
WRITE FOR COMPLETE PRICE LIST

HOllywood 7-6179
QUANTITY PHOTOS, Inc.
5509 SUNSET BLVD., HOLLYWOOD 28, CALIF.
LARGEST PHOTO REPRODUCTION PLANT IN WEST

TRADE WINDS

Of fans and tubes

Two divisions of the Westinghouse Corp. make sales changes. McCombs Supply Co., Denver, is new distributor for the Sturtevant division and will handle that line of ventilating sets and general purpose fans. David P. McIlmoil joins the electronic tube division as Los Angeles district sales representative. He has been lamp application engineer in Los Angeles office.

Valve sales in West

S. R. Kaiser, Downey, Calif., is appointed sales representative for C. B. Hunt and Son, Inc., Salem, Ohio, manufacturers of air and hydraulic control valves. He will handle the Southern California area.

New Goodrich distributor

Electric Steel Foundry Co., Portland, Ore., distributors of stainless steel and various other types of pipe and fittings, is appointed to handle the B. F. Goodrich Co. line of Koroseal rigid pipe and fittings. A complete stock of the pipe will be maintained.

Meyercord appoints Whitman

Manufacturers of decalcomania, the Meyercord Co., Los Angeles, appoints Nelson A. Whitman as sales manager for Pacific Coast division. He has served in a sales capacity with the firm for eight years.

Want Ad Order Blank

Please run my ad 12, 6, 1 time (circle which) at the rate of $7.50 a column inch. Make ad 1, 2, 3 columns wide (circle which) by .....inches (specify, one to 10) deep.

Signed.....

Address.....

City.....**State**.....

WRITE AD HERE:

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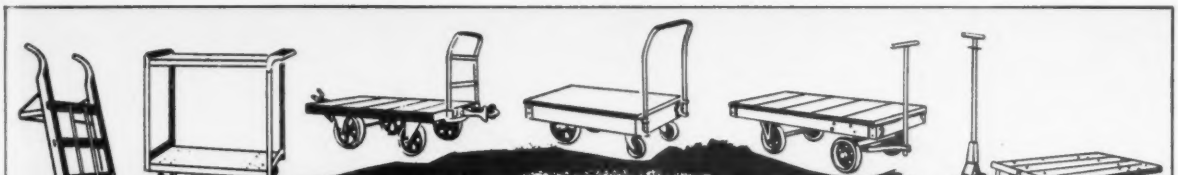
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Send ad to Classified Dept.,
WESTERN INDUSTRY, 609 Mission St., San Francisco 5, Calif.



NOW! FASTER DELIVERY

from *Nutting* new

WEST COAST WAREHOUSE

253 4th St. **OAKLAND** California

OVERNIGHT DELIVERY to most areas of the most popular models and sizes of Nutting Floor Trucks, Casters and Wheels . . . maintenance, repair services and parts also available.

CONTACT YOUR NEAREST NUTTING REPRESENTATIVE

Backed by the most complete line of floor trucks in America plus factory engineering services, these experienced sales engineers can quickly solve your handling problems.

OAKLAND
E. C. Buehrer Associates, Inc.
351 5th Street
PHONE: TEMPLEBAR 6-2082

LOS ANGELES
H. L. Stewart & Associates
1547 Estudillo Avenue
PHONE: ANGELES 1-2194

PORTLAND
F. E. Bennett Company
426 N. W. 6th Avenue
PHONE: ATWATER 2321

SEATTLE
Secord Sales Company
95 Connecticut Street
PHONE: MAIN 0737

SALT LAKE CITY
Equipment Supply Co.
16 Post Office Place
PHONE: 3-9074

TUCSON
L. J. Clarke & Company
2625 N. 1st Avenue
PHONE: 4-6233

SPOKANE
H. H. McVeigh
West 310 First Avenue
PHONE: RIVERSIDE 5927

Since 1891

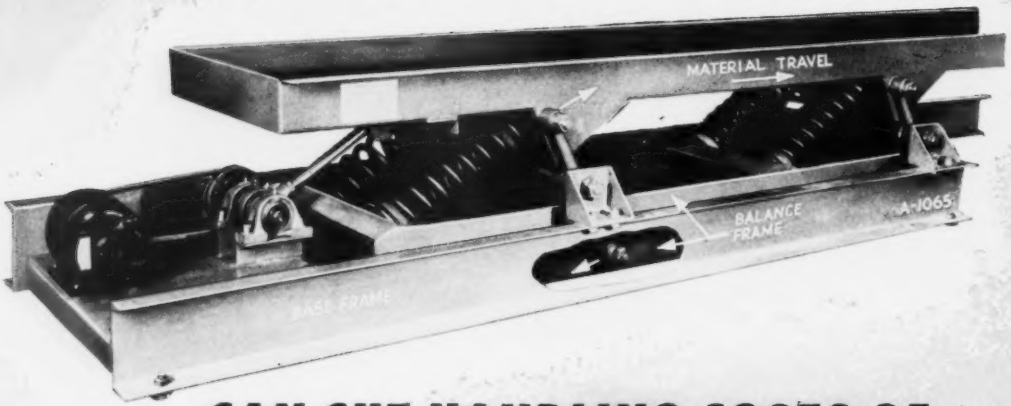
NUTTING TRUCK & CASTER COMPANY

1726 Division Street • Faribault, Minnesota

. . . for more details circle No. 149 on Reader Service Postcard
See Directory listing page 117, Yellow Section
For more details, adv. back cover, circle No. 255 on Reader Service Postcard
Adv. on back cover, see Directory listing page 121, Yellow Section

Natural Frequency

VIBRATING CONVEYORS



CAN CUT HANDLING COSTS OF

Pulverized, Granular or Lump Materials . . . Castings, Boxes, Packages

Hot or Cold . . . Wet or Dry . . . Corrosive or Abrasive

Natural Frequency Conveyors will move materials horizontally or up inclines of 10° at speeds up to 70 F.P.M. They can also be used to heat, cool, dewater, dry or screen a wide range of materials.

LOW POWER COSTS

Natural Frequency Conveyors utilize the regeneration of power from springs designed to vibrate at the natural frequency best suited for conveying—the new power required is reduced to a minimum. They are built in various widths and in 10 foot sections—one drive will operate several sections.

NO EXPENSIVE FOUNDATION

Due to elimination of vibration from base frame, these conveyors can be mounted or suspended, without special foundations or bracings. Conveyor units can also be used in temporary locations without anchoring.

NO SPILLAGE

There is no violent agitation to cause spillage. The trough is free of obstruction to flow, or pockets to trap perishable materials for spoilage or infestation. All conveyor surfaces can be easily cleaned and sterilized. Furnished with standard open troughs, but enclosed or special troughs for scalping or dedusting can be furnished.

Get complete information on the Natural Frequency Vibrating Conveyor. Ask to have an S-A engineer call, or write for Bulletin No. 353 which contains specifications and general information on dimensions, etc.

S-A

STEPHENS-ADAMSON MFG. CO.

Factories at Aurora, Illinois; Los Angeles, Calif.; Belleville, Ontario

1337 E. 37th Street, Los Angeles 11, Calif. — 1087 E. Burnside St., Portland 14, Ore. — 148 Mission St., San Francisco 5, Calif. — 214 Joseph Vance Bldg., Seattle 1, Wash. — 310 So. 33rd St., Salt Lake City